

NAB funding exercise

THE NATIONAL ADVISORY BODY has almost completed the final draft of its plan for polytechnics and colleges which is due to be sent to Sir Keith Joseph next week. John O'Leary reports on the details of the plan agreed by the NAB committee (page 11)

It is strange that the women's movement has never taken much interest in **HANNAH MOORE**, described by Cobbett as "the old bishop in petticoats." R. L. Brett discusses her life and achievement (page 13)

Two views of **ACADEMIC PUBLISHING**: Author David Caute offers some advice to the aspiring writer and publisher Gordon Graham explains the thrills and trials of the book business (pages 14 and 15)

How do **VOLCANOES** affect the weather? A century after the eruption at Krakatoa, H. H. Lamb examines the available evidence (page 16)



Alan Ryan reviews the first of a projected 28 volumes of **BERTRAND RUSSELL's** papers. Do we need them and what shall we learn from them, he asks? (page 17)

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Haldane to Mason: the making of science policy

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The NAB's quality game

The growing row over town planning courses in polytechnics and colleges demonstrates the dangers of changing the rules half way through a planning exercise. It also demonstrates just how far the non-university sector in general, and the National Advisory Body in particular, are from an agreed view of how much weight quality judgments should be given in deciding which institutions are to be the winners and which the losers.

What has happened about town planning can be (fairly) simply described. The NAB's first attempt at rationalizing these courses was largely based on the need to maintain a proper regional balance. This led to proposals to close courses which both the Council for National Academic Awards and HM Inspectorate regarded as of higher quality than other courses which were being allowed to continue. So the NAB's second attempt at rationalization leans heavily on the views of the CNA and the inspectors. This of course produced a quite different list of winners and losers. The NAB committee has now endorsed the board's second thoughts on town planning, although without much enthusiasm, but reintroduced a small element of regional balance by reprieving the course at Leeds Polytechnic.

Three issues are raised by this episode. The first and least important is that it has all been a muddle. For instance, institutions were promised by the NAB that they would at least be given an opportunity to consider any proposals which affected them even if they were not to be properly consulted. That worked all right for those institutions on the first town planning list. But those which imagined their courses safe but then found that because of a change of policy they were to be closed after all were denied any proper foreknowledge let alone consultation.

It is important that the NAB should continue to follow the principles of participative planning which it has adopted and mostly respected. These principles must balance the need for public information with the need not to face colleges with *faits accomplis* which they cannot properly dispute. Neither has been particularly well observed in the case of town planning. But that is hardly surprising. This is the NAB's first plan for the sector which not only

has had to be produced to a tight timetable but also is more comprehensive and fundamental than any subsequent revisions are likely to be because this is an attempt to impose some order on an inheritance of almost random anarchy.

The second issue is the legitimacy and the reliability of the quality judgments being offered by the CNA and the Inspectorate. To sum up the common view in perhaps too simple terms, it is that the CNA may be able to offer reliable advice but that it is not legitimate for it to do so because this will destroy the trust that should exist between validator and validated, while the Inspectorate has the undoubted right, even duty, to offer advice on quality, but that the advice may not always be reliable.

This too is an important issue. But as with the first complaint about the NAB's muddle, it can be ameliorated and softened rather than solved. What can never be removed is the natural reaction of those who are likely to suffer as the result of quality judgments to challenge both the legitimacy and competence of such judgments. But at least with the relatively open system in which the NAB, the CNA, and in this respect the Inspectorate operate those who suffer are given a fighting chance rather than being dispatched by the anonymous assassinations of "informed prejudice."

What however can be improved are the procedures under which quality judgments are used in evidence. It is particularly important that quality should be an independent variable that is introduced right at the start of the planning process, rather than being used as a veto on the outcomes of that process. In that way a repetition of the town planning row can be avoided. It is also important that the CNA and the Inspectorate, the first with a built-in bias towards degree courses and the second with secret axes to grind, should not remain the only effective sources of quality advice for the NAB. Both the Business and Technician Education Council, for sub-degree courses, and the professional institutions should be included. Finally, the NAB itself will probably have to develop its own limited but independent academic intelligence, perhaps

based on institutional visits and its own working groups.

The third issue is the most important. Put very simply it is: what should the NAB do about quality? Or even: what does quality mean in the polytechnics and colleges? These questions are important because the latest addition to NABspeak is "judgmental overlay". What this means is that even after all the calculations and qualifications have been made in determining an institution's pool allocation - sub-quanta, subject, level and mode weightings, mitigation, and all - the NAB would still have the right to vary this final allocation to reflect its own instincts about the institution.

At its best this "judgmental overlay" could represent a very necessary margin for flexibility and discretion. But it is easy to see how it could be used expediently to iron out awkward bumps, or dips, in the allocation of the pool or even to subvert the principles on which this allocation had been based. Although the resource and physical peculiarities of institutions will clearly provide an important element in any "judgmental overlay", perceptions of quality will just as clearly play a predominant part.

So the NAB's "judgmental overlay" not only will raise the issue of what we mean by quality in the non-university sector but also may make it difficult to disentangle institutional circumstances from broad policy. How, for example, will it be possible to distinguish between a polytechnic being given an extra allocation because the NAB regards it as an excellent institution from several polytechnics being given more money as the result of a policy of concentration? The theory might be different but the practice could be rather similar. So any "judgmental overlay" cannot operate in a vacuum without reference to the NAB's broad policies on subject, mode, and level balance. Similarly quality cannot be left as a clunkish category that can be heaved at the other side in any dispute over policy. It must be disaggregated and redefined. Perhaps a start could be made by dropping the term "quality" and adopting in its place the term "appropriateness". The former has a conservative and historical ring; the latter introduces a more progressive and contemporary dimension.

Race on the campus

There are many black faces to be seen in Britain's universities and polytechnics - but few of them belong to Britons. As in so many other areas of public policy, higher education provides a reservoir of critical and progressive views about the beliefs and practices of lay society, but is strangely reluctant to examine its own beliefs and practices in a similarly critical way. Racial discrimination is something to be studied in the world beyond the campus, it is widely regarded as a real-world issue within universities and polytechnics.

Higher education indeed is particularly backward in recognizing that racial discrimination may be an issue which it has to tackle in a practical, opposed-to-a-theoretical way. Further education, which is much closer to being a mass system and so reflects more accurately the racial diversity of modern Britain, is rather more self-aware. Its teacher education, the issue of race tends to be seen in the context of devising a suitable multicultural curriculum - which the schools must then put into practice - rather than, as in higher education, being a direct, practical problem of how trainee teachers should be selected and educated.

Last week a new Association of African, Caribbean, and Asian Academics met for its inaugural conference in London. Its aim was to challenge the growing indifference of higher education on race. At the time

language may have been exaggerated - without excusing the indifference of the universities - it is fair to describe them as "the biggest shareholders of institutionalized racism", but the concern expressed at the conference must be taken seriously.

There were three areas of complaint. The first was access. Quite clearly black Britons are underrepresented in higher education. Just as clearly, very little is being done to remedy the situation. Indeed for most people the problem does not exist. Yet this indifference cannot last. Soon it will not be possible for higher education to continue to ignore the tangled issues of underachievement by black people in secondary schools (and overachievement by children of Asian background). The problems will hit further education and the Manpower Services Commission first perhaps, but in the end higher education too will become embroiled.

The second area of complaint is the extreme underrepresentation of black Britons among university and polytechnic teachers. This of course is a logical extension of the first complaint. If few black students are admitted in the first place, even fewer are likely to emerge at the other end with appropriate qualifications for an academic career. The third, and perhaps the most serious, complaint is that British higher education has little interest in black studies. This is a

wrong to imagine that more black studies courses meant greater recognition of the black dimension. After all few people would measure the growing recognition of the role and perspective of women within higher education in terms of women's studies courses. Instead they would measure it in terms of changing preoccupations in English, history, social science. The black dimension too is best developed within mainstream disciplines rather than in fringe pseudo-disciplines.

There can be little doubt that universities and polytechnics face a challenge of their good will over race. So far they have barely begun to recognize that change let alone meet it. Far too often they continue to reflect a racially homogeneous and mono-cultural Britain that no longer exists (if it ever did). The example of equal opportunities is very relevant. If a tenth of the energy and commitment that has been expended in promoting the interests of women in higher education could be exercised in the cause of blacks, spectacular progress could be achieved. One final thought: universities in particular have based their claim to admit a desirable number of overseas students on the need to maintain their international character and to transcend national boundaries in the pursuit of advanced teaching and research. Yet if they cannot come to terms with the cultural diversity of modern Britain, how can they reasonably claim to be able to comprehend the much greater cultural diversity of the world.

Laurie Taylor



National Advisory Body. Will you hold on one moment, please. Certainly.

National Advisory Body. Can I help you?

Well, yes, I wanted some details of courses and departments which might be closing down. You see I was...

Just a moment. I'll put you through to the Department Closure Department.

Thank you. Department of Department Closures.

Oh, good morning. I wanted to have a word with someone about department closures...

Well, you've certainly come to the right department. Which particular subject area did you have in mind?

Er... Town Planning. One moment, please.

Thank you. Good morning. Town Planning Closures Department.

Ah, good morning. I wonder if you could tell me which Town Planning Departments are scheduled for closure in the near future.

Did you have any specific Town Planning Departments in mind? Well, I was thinking of Coventry, Coventry? Yes, I think that's fairly straightforward. Where are we now? Ah yes. We closed down that department at our meeting four weeks ago.

So it's closed.

Not quite. No. We decided it should be re-opened at our meeting last week.

I see. And Gloucestershire College?

Well, that was going to close.

But now it's staying open?

No... no... we've had another careful think about it. And it's going to close. But none of this is quite final. So, it could re-open.

I see. Would it be at all possible to say how the actual decisions are being made. It seems a little... well... confusing.

Confusing? Not at all. We have three basic principles which are always brought to bear upon these matters.

Yes?

Firstly, we always endeavour to make clearcut decisions based on one set of criteria and then invoke a completely different set whenever the mood takes us. And secondly we always try to ask for expert critical advice on the matter in hand from those who are peculiarly ill-fitted to provide it. And finally, we make a point of paying no attention whatsoever to the people who's actually resident in the places where the changes will be occurring.

But doesn't all that seem a trifle high-handed?

Not at all. Our claim is that we have acted throughout in a manner which accords with traditional professional standards.

Of the NAB?

No. Of Town Planners. Any other problems?

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It was a case of hair today, gone tomorrow, for six Glasgow University students determined to help a black South African student come to the university. The six raised £3,000 for the Luthuli Scholarship Fund, established to commemorate Chief Albert Luthuli, former rector of the university.

The students involved in the hair raising scheme were (back row, left to right) Stuart Sutherland, Joe-Adigwe and Nick Alchison, and (front row), Mikael Shields, Paul Madill, and John Brady.



Freedom of speech on DES agenda

by David Jobbins

Freedom of speech on the campus is to be added as a central feature of private law between vice chancellors and Sir Keith Joseph, Secretary of State for Education, next week. Sir Keith, himself the target of a violent demonstration at Warwick University, is known to be deeply disturbed at other incidents including the treatment of Oxford lecturer Mr Michael Heseltine at Manchester.

Monday's talks are expected to concentrate largely on the universities' financial position for the next year and the "great debate" triggered by the University Grants Committee letter. Sir Keith's concern may become a dominant feature of the meeting, the latest of a series of regular meetings between the Secretary of State and the Committee of Vice Chancellors and Principals.

It is keen to explore ways in which students with perhaps unpalatable views can be protected and may not be stifled by protestations by the vice chancellors that they are doing as much as they can.

Student leaders have been anxious to draw on condemn recent incidents, laying responsibility firmly at the door of extreme left-wingers. But they fear the ground is being prepared for a full-scale political attack on the National Union of Students, and that Sir Keith will be increasingly receptive to the criticism of NUS levelled this week by the right-wing Monday Club.

In a policy paper written by its president Mr Elwyn Jackson, the club says NUS has steadily moved to become a leading left-wing political organisation, rather than one interested in student issues.

It describes NUS as totally unrepresentative of students, engaged in "malicious activities", and calls on the government to state publicly it will have nothing to do with the union. NUS president Mr Neil Stewart described the paper as "a hysterical and totally inaccurate attack on the National Union", and dismissed its assertions as having no foundation in fact.

As the NUS conference in Blackpool, Neil Stewart was expected to condemn the violence. Students' union opponents of campus protests, he was to say.

New university cuts pose threat to extra students

by Ngaio Crequer

New university cuts in 1985 and 1986, now confirmed, may cause vice chancellors to withdraw or reduce their offers to take extra students in the next two years.

Dr A. F. Trotman-Dickenson, principal of the University of Wales Institute of Science and Technology, said they had with drawn their offer of 25 extra students which was made on the basis of level funding. He said: "If we take these students far from being helped we are being kicked in the teeth."

As another disincentive the University Grants Committee has warned that if taking extra students leads to worse staff/student ratios, it will assume that universities will divert resources from research to teaching. That could mean less money for research in the future.

In a letter to vice chancellors the UGC warns of further cuts in the university grant in the mid 1980s. It passes on the Department of Education and Science's recurrent grant totals for the next three years which were announced last week.

There are: 1984/85 £1,249m; 1985/86 £1,289m; 1985/87 £1,320m. The last two are subject to reviews in the next public expenditure review. All cover financial rather than academic years, which explains why the 1984/85 total differs from that announced by Sir Keith Joseph, Secretary of State for Education and Science, three weeks ago.

The UGC estimates that even after allowance has been made for more money on "new blood" and information technology these totals still represent a further cut of half a per cent in each of the three years.

NAB splits the difference on share-out formula

by Peter Scott

The National Advisory Body has decided to recommend to Sir Keith Joseph, Secretary of State for Education and Science, a compromise funding formula that is skewed in favour of polytechnics and other major colleges.

At its meeting on Monday the NAB committee decided to recommend the "sub-quantum" method for distributing next year's advanced further education pool. This means that institutions will be divided into four groups: polytechnics, other major colleges, minor colleges, and specialist colleges like the Royal Northern College of Music.

Each group will be allocated a block of money that preserves historic relative values in funding. The polytechnics will gain up to £1.1m extra compared with what would have been available if the pool had been distributed according to a uniform formula.



No money for NERC projects

by Jon Turney

The Natural Environment Research Council cannot find the money to start most of the university research projects approved by its grant committees for 1984. A meeting last week found a little extra money for grants, on the same day a letter from concerned geologists to *The Times* expressed alarm at a grants freeze. But two thirds of the 60 projects approved for funding last October still have no definite start date, and a further round of grants in due to be awarded in March.

The shortfall, which arises because of over-optimistic forecasts of inflation and wage awards, is deeply embarrassing for the council, which spends only around £4m of its £58m share of the science budget on university research grants. The NERC's 1982-83 annual report, published in October, says university support is the council's "highest priority".

But the geologists' letter reported that all four of the NERC's grant committees had been told it was unlikely any new grants could start in 1984, unless new money was found.

The council's sensitivity about the problem is shown by a signature absent from the letter as published. A council member originally signed, but when publication was delayed by last week's Fleet Street dispute, the council chairman, Sir Hermann Bondi, contacted the member concerned and insisted he remove his name or resign from the NERC. The name did not appear. One geologist who did sign the letter said this week "NERC would have liked to hush this whole thing up".

Several council members are especially concerned about geology, which is the only one of the four grant areas falling under NERC committees with no alternative source of funds. The geologists themselves stress that a threat to new starts just when "new blood" appointees in universities are starting work is especially grave.

In a separate letter to *The Times* this week, Sir Hermann said the council had sanctioned an extra injection of funds, which would enable a significant proportion of the projects to start "including all the most urgent ones". But only one third of the grants approved so far have been given the go-ahead to start in January, costing the council around £150,000. It will need to find six times this sum to start the normal number of grants in 1984 - and this money is now being sought from other NERC programmes.

In their defence, NERC officials point out that existing grants mean increases in overall spending on universities next year, and that there will be no problem meeting costs incurred in 1985-86 from grants started next year. Dr John Bowman, the council's secretary, said: "If the system had worked smoothly, we wouldn't have given so many grants in the last few years - we will have to bring things back into balance."

However, Professor Sir James Beament, a former chairman and long serving member of council until September this year said the shortfall was very surprising. "I have thought for a very long time that the NERC has lived too close to a knife edge because its recurrent commitments to institutes are too large," he said. This meant the council's flexibility in university research funding was severely restricted.

Nevertheless, he stressed that in the past the grants books had always been made to balance without extra money.

He said no research team would be wasting its time if it tried to improve the communication of its results. It was better to spend 10 per cent of research time telling people what had been found, than 100 per cent on research that will disappear.

Sir Douglas was addressing the Social Research Association. Full report, page 3.

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Science Correspondent

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Letters to the editor

Case for more minority studies

Sir, - Thank you for your excellent editorial comment "Race on the campus" (THE, December 2) with your emphasis on the need to come to terms with racism in higher education. However, I feel that I must disagree with one of your points and argue for more courses in black studies, Caribbean studies, Asian studies and the like. There seem to be two options open for bringing about change in this area - the use of a "permeation" approach or, alternatively, the use of a "special emphasis" approach. However, the use of a "special emphasis" approach will take a long time for the permeation of a black perspective and positive images of race on all courses, but black studies and such courses can be set up relatively quickly and will hopefully recruit the necessary expertise from the black community. These courses can also provide a sound basis for effective permeation, deriving from real structural and attitudinal changes instead of mere tokenism.

I would also like to mention my feeling of dismay triggered by reading about the Polytechnic Council for the Education of Teachers rejection of an anti-racist perspective in polytechnic courses. To say "I do not support anti-racist education" is to say, syntactically as well as morally, "I support racist education". Is it that the PCET is one of the remaining great bastions of British racism?

The council speaks of "the necessity of being sympathetic to the educational needs of pupils from the several ethnic backgrounds". Indeed, sympathy is a feeling felt by the privileged for the underprivileged, by the powerful for the powerless, but sympathy changes nothing. Thus it seems that their construction of the issue is that the "problem" is that of special ethnic needs rather than ethnocentric and racist courses.

If the PCET is in fact committed to education for a multicultural society shouldn't its stance be anti-racist? It is racism - bias, ethnocentrism, xenophobia, prejudice, marginalization; etc - that attempts to maintain, at all costs, a monocultural society based on WASP (White Anglo-Saxon Protestant) dominance. In fact I would argue that a refusal to take an anti-racist stance is particularly antithetical to the spirit of polytechnic education in contemporary Britain, especially in

view of the way in which primary education as well as secondary continues to fail black young people. Yet even the schools are attempting to change. "Simon thou son of Jonah, lovest thou me? ... Feed my sheep!"

Yours sincerely,
GODFREY L. BRANDT,
Lecturer in Education,
(with special reference to Multicultural Education),
University of London Institute of Education.

Sir, - It was nice to see THE TIMES devoting editorial space to the issue of ethnic minority students in higher education, and rightly pointing out that universities and polytechnics have not yet begun to recognize the problem, let alone change their policies and practices in any way.

One reason for the lack of attention paid to the issue is that information is not available to back up arguments for changed practices which might allow more British-born minority students access to higher education, nor to argue the need for change in courses

offered. There is no quantitative research documenting the number of minority students and their distributions between various departments in universities, polytechnics and colleges, nor are there any official statistics.

This lack of knowledge constitutes a serious problem to the formulation and monitoring of any "equal opportunity" policies. Neither is there any research documenting the routes minorities take into higher education (apart from the special access route) the courses pursued, the reasons for entering higher education, the obstacles overcome en route, the experiences while in higher education and their employment goals. It would seem very important now to inquire how minority students viewed their own higher education and their status as "highly educated" members of the society. All that is needed is funding for research to provide the information on which to argue for and base new policies and practices!

Yours faithfully,
SALLY TOMLINSON,
(Senior Lecturer in Education)
University of Lancaster.



Malcolm Lowry

Sir, - I welcomed Gordon Bowker's piece on Malcolm Lowry (THE, November 25). Hopefully it will contribute to a widening of interest in the work of a writer who probably offers the most searching interrogation of the violence exercised by the symbolic forms of power in Western society since Lawrence. It is not really surprising that British literary criticism has chosen to ignore Lowry since, for all its apparent sophistication, it still works within a framework of liberal humanism updated by the assimilation of the cosmetic of a safe, formal modernism. Much of modern British fiction could be similarly characterized, as the reading of many Bowker nominations will reveal. The very scale of Lowry's exploration of spirituality transgresses

and violates the relatively comfortable, and comforting, boundaries of guilt and barren sophistry of a Murdoch or a Golding, while the liberating and fundamental analysis of the alienation of political culture only serves to increase our sense of disappointment at the "futility" of the spaces wasted by Amls, Ssoov and Angus Wilson.

When literary criticism, as it is practised in the strategic centres of publishing, reviewing, and teaching, finally yields to a broadly based reading informed by historical understanding, social theory, and cultural analysis, then Lowry will occupy a central place in British literary and cultural studies. An informal survey which I conducted recently confirms Gordon Bowker's sense of the scandalous neglect of Lowry by literary scholars (with

some excellent exceptions) and in higher education courses. Portsmouth has been one of the few places, if not the only one, where he has been consistently on syllabuses since 1967. At one point in *The Fate of the Earth*, Jonathan Schell says, "We deny the truth that is all around us. Indifferent to the future of our kind, we grow indifferent to one another. We drift apart. We grow cold. We drive our way toward the end of the world. . . . It is not too pretentious, or fanciful I hope, to suggest that this is at the heart of *Under the Volcano*, the failure of Western society to reproduce itself in forms other than those of tyranny, fissure, and destruction."

Yours faithfully,
ROGER BROMLEY,
Portsmouth Polytechnic.

Quality control

Sir, - Further to your editorial of November 18, one important point has been missed in your argument that validating bodies should act as academic intelligence providers to the resource allocating bodies, i.e. the National Advisory Body and the University Grants Committee. Resource allocating bodies, however they provide themselves with intelligence about quality, will have to weigh quality considerations with other criteria in making decisions about the future of courses. The reality of the resource allocation game is such that the banners of quality may in practice be used to obscure all kinds of manoeuvres. Rather than being a hopeful start the case of town planning is unlikely to have been unaffected.

If the credibility of validating bodies in quality assurance is not to be undermined fundamentally by being drawn into the politics of resource allocation, it is vital that they retain a position independent of the resource allocating bodies, and that they continue themselves to making threshold judgments about quality. In other words, the future quality of higher education is likely to be best served in the long run by a clear separation of validating and resource allocation powers.

Yours faithfully,
PATSY HEALEY,
Oxford Polytechnic.

Sir-vile

Sir, - Are academics really as obnoxious as Laurie Taylor's constant use of the word "sir" implies?

Yours faithfully,
CHRIS BEACH,
45 Sunfield Road,
Whitstable, Kent.

Don's Diary

Sir, - Am I alone in thinking that the picture painted of many of the "Don's" - globe-trotting, athletic, cultured polymaths - is atypical? The following extracts from the diary of a lecturer at college "somewhere in the Shires" has fallen into my hands.

MONDAY
Stuck in traffic jam for most of journey to work. Car park full on arrival. No money for meter. Late for 9 o'clock tutorial. Stanley Dimwitly (second year student rep) asks if the essays handed in two months ago were done "just for fun" and if not can they have them back? "Yes, of course. I'll be bringing them in tomorrow." (I can find them. If not, must invent stunningly original excuse. "My God! They've been stolen!")

TUESDAY
Meeting with colleagues in department of alternative studies. New cross-modular option for joint degree needs urgent revision. Critical appraisal of main objectives badly looking. More important marking scheme in present form adds up to 107 per cent. Can't wait until what British diplomats went through in the last stages of negotiations with the Argentinians before the invasion.

WEDNESDAY
Staff meeting yet again this afternoon.

OU texts

Sir, - Professor S. E. Finer's review of *States and Societies* (THE, November 25) is less than charitable by every pleasant point he makes about the book, is shortly afterwards acknowledged. It has introduced me to many authors I might never have encountered. True, I seem to agree with hardly a word of what they have to say. "It is more likely to corrupt than to liberate." The quote from Wells about Fabianism is under a heading about Fabianism. The quote from the Marxist-Leninist is under a heading about Marxist-Leninism. The quote from the

Car parking, staff toilets, need for new pigeonholes are perennial talking points. Thankfully "Move to new building" has not appeared on the agenda for some time. Every cut has a silver lining.

THURSDAY
Evening class. How many will be there this week? Hopefully, not Mrs Bodger. Making chutney and pulling the neighbours to pieces are about her level not neo-classicism and its influence on the Luddite movement. Who let her on the course? Mercifully, she does not arrive. (Sound investment, that Voodoo doll. On close inspection it bears a striking resemblance to the vice principal. Where's that pin?)

FRIDAY
Exceptionally busy day. Weekend shopping early morning, change books at local library (that copy of Fiona Richmond's book has finally arrived), bag of coal in the hatchback, see colleague in department of future studies about meeting at Kempton Park and at 2.30pm throw myself into seat in lounge bar of the Philosopher's Arms for final hour's work of a typical week.

Yours faithfully,
KETH GIBSON,
School of Law,
Leeds Polytechnic.

TONI DEL RENZIO,
29 Dover Street,
Canterbury, Kent.

RCA report

Sir, - Robin Plummer's report on the Singer Committee's letter on the Royal College of Art deserves support and further discussion. The weakness of the report lies in its attachment to a narrow view of the market and the financing it will produce, but, as we know, the problems of the Royal College are otherwise. It is too small. Its resources, both material and intellectual, are woefully inadequate.

The report's suggestions of flexibility across the whole field of studies it has regarded must be widened across the whole field of studies pursued wherever in the Royal College. This is not to rule out any narrower specialist research followed and the like which could feed back into the teaching and give students a good cultural basis upon which to work and which would serve them every bit as much as any superficial business studies.

What is required of designers, even if industry in this country does not yet recognize it, is the challenge to productive methods and to the aesthetic assumptions built into every engineering discipline. The designer is to be thought of as a manufacturer of processes but to be seen as the grain of sand that produces the pearl.

Yours faithfully,
TONI DEL RENZIO,
29 Dover Street,
Canterbury, Kent.

case think of similar, influential tones where we could ask the question "from whom might we have expected to hear about this?"

Introduction to *Western Philosophy: Ideas and Arguments from Plato to Sartre*, in a five hundred page book gives the greatest social thinker of the nineteenth century only four pages! Surely here is a question of balance as much as in any OU text?

Yours faithfully,
CLIFFORD HEALEY,
School of Law,
Leeds Polytechnic.

Student demand will rise, says AUT

by Sandra Hempel

The Association of University Teachers this week published its own figures challenging Government assumptions on student demand and Polytechnic, "the polytechnic's primary criterion for promotion was teaching excellence" (THE, November 25).

I am sure that, if what Dr Keen says is true of Oxford, many other polytechnics would be interested to know how they determine teaching excellence. Observation by senior colleagues? Surely not. Reports drawn up by students? Heaven forbid. Examination results? Self-assessment? Conductor gossip? Come on, Dr Keen, let's have the truth. We all know the promotion from Lecturer Grade the Senior Lecturer in polytechnics is virtually automatic (for better or for worse), and in the case of promotion to Principal Lecturer, the main criterion is course management or administration (although with contracting staff establishments these promotions are now available). Candidates for promotion may be invited to give their views on teaching, but they do not have to any good or ill themselves.

Teaching excellence as a criterion for promotion is a non-starter because no one wishes to tackle the problem of how to determine what constitutes excellence and how to assess it. I doubt whether anyone in education would dispute the notion that teaching excellence needs to be defined and should be properly recognized in teachers' career structures. Such a definition will vary significantly depending on the ages of the students and the subject being taught. As far as universities, polytechnics and other degree-teaching institutions are concerned, it ought to be the case that effort devoted to teaching is at least as acceptable and rewardable an activity as the pursuit of research, the publication of books and articles, or the running of a course. That means that skills in the preparation of materials (lectures, hand-outs, dossiers, overhead projector sheets), management of classes (use of equipment such as OHPs, videos, microfilm), organization of student contact and task-based learning, marking of written assignments (with detailed and constructive criticism and comment) and experimentation with different methodologies - all time-consuming and often neglected activities - should be encouraged and recognized as the proper activities of teachers in higher education. More over they are all assessable to some degree for the purpose of promotion. The will is there to consider them.

Polytechnics currently may be better at teaching than universities, thanks to the CNA (which Dr Keen mentions) and the fact that the validation process requires public-sector lecturers to think through more thoroughly what they are trying to achieve in their courses and how they can best do so. But I doubt whether the educational development units to which Dr Keen refers have had much impact upon the teaching that goes on in the polytechnics themselves.

Yours faithfully,
DR PETER GOLD,
Department of Modern Languages,
Sheffield City Polytechnic.

Projections

Sir, - Thank you for giving so much space to my arguments on student projections in your Letters December 25. However, space may have forced you to omit my conclusion on the social effect of the present reduction of university places. In the period from 1979 to 1982 the continued rising demand from professional and managerial (Class I-II) children, from 88,000 to 113,000 (gross) applications, resulted in a slight increase in entrants, from 49,000 to 53,500. But the virtually stationary demand from working class (Class III-IV) children, from 34,000 to 32,200 applications, yielded a sharp decline, from 17,100 to 12,700 entrants. The same factors are likely to halve the numbers of working class entrants within the life of this millennium, if the policy of cuts is maintained.

Yours faithfully,
E. G. EDWARDS,
University of Bradford.

NAB shareout formula

continued from front page

based on the allocation of this year's pool, would have been even more in favour of the polytechnics than the sub-quota method.

Middlesex Polytechnic, for example, would only have received £15.6m of extra funding had been applied. The DES formula had been accepted as a compromise between £16.7m and £15.9m and £16.1m. Humberside College in contrast would have been entitled to £6.4m under uniform funding, but it will now receive about £300,000 less.

The NAB has now completed its advice to Sir Keith Joseph. It will go the DES either today or on Monday and final decisions are expected before Christmas.

The NAB board met on Tuesday and decided to recommend that up to 20 new courses should be approved to start in 1984. It also recommended that a further 225 places at a cost of £300,000 should be added to the public sector's information technology initiative in 1984. All the IT places available this year have been filled.

The Greater London Training Board was this week urgently considering the future financing of its youth and training activities following the Manpower Services Commission's decision to stop its funding under section 137 of the Local Government Act 1972.

The decision comes after almost a year's delay and will affect all other training authorities. The MSC took it on only to be able to facilitate repayments to local authorities for activities carried out on behalf of the MSC, in the context of its own policies and priorities, and not as the board's own

workforce. The future needs of continuing education must be met and participation extended to other social classes and to more members of ethnic minority groups.

"Does the Government believe that ability and intelligence are found only in children of social classes I and II?" the report asks. "Does the Government believe that women should have equal opportunities to enter higher education? Does it want to encourage more mature students? Does it accept the skilled manpower needs of the economy in the year 2000?"

In its first meeting with Mr Peter Brooke, under secretary of state for education this week, the union demanded a clearer statement of the Government's objectives. It stressed the need for well-qualified graduates for the 1990s and asked the Government to provide enough resources for research and continuing education.

It later described Mr Brooke's response as "sympathetic" and said that he acknowledged the need for agreement on the basis for forecasting demand for future student places.

"We deplore the fact that the minister did not commit the Government to sustained access and that the Department of Education and Science seems to be planning for a 20 per cent reduction in skilled graduates," said the AUT's general secretary, Diana Warwick. "But we were glad to hear the minister say that he would welcome a rise in the number of well-qualified students coming into the system."

Bishops join battle over De La Salle

by Patricia Santinelli

The future of all voluntary colleges is at stake as a result of the Secretary of State's decision to end teacher training at De La Salle College, Roman Catholic bishops warned this week.

"We are profoundly disappointed by Sir Keith Joseph's reaffirmed decision to end teacher training at the college, the unilateral abandonment of the historic share and the unwillingness to give any undertakings for the future could put all voluntary colleges in jeopardy," the bishops said.

The Roman Catholic college in Manchester was ordered by Sir Keith Joseph to cease teacher training in 1984 after a long battle with the DES. The college, which has been in existence since 1948, has received scant attention.

"In his letters giving reasons for his decision, Sir Keith scarcely mentions these considerations. It is the view of the bishops that, if national planning can no longer take account of the pastoral dimension, we have entered into a new era in our relationship with central Government."

The Catholic Bishops' Higher Education Committee is to meet with other voluntary providing bodies to try and reach a deal with the Department

of Education and Science an agreed basis for consultation and allocation of teacher training places.

"Sir Keith says he would wish to retain the presence of voluntary colleges in the higher education provision of England and Wales. The bishops expect him therefore to cooperate with the voluntary bodies in making this expressed wish a genuine and ensured reality," said the statement.

The bishops are particularly distressed at the apparent dismissal of the important regional considerations, presented by them to Sir Keith and the DES. They point out that the factual relationship between the recruitment of teachers and the existence of De La Salle in the North of England has received scant attention.

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Jobs go as publishers pull out

Academic Press, one of the country's largest scientific publishers, is to make 130 staff redundant and move the bulk of its books division to America.

The announcement was made suddenly last week to the company staff and coupled with promises of generous pay-offs and good careers counselling services. The company managers have blamed "high overheads" and "price resistance" for the decisions.

Trouble has been brewing for several years at AP, which is owned by the American company Harcourt Brace Jovanovich Ltd. Over the years, senior staff have departed suddenly or resigned in an atmosphere of intrigue and amid allegations of mismanagement and extravagance.

AP was set up in 1959 in London and has built up a strong reputation as a scholarly scientific publishing house. It has been publishing just over 200 new titles a year, and some 70 internationally renowned journals including *Sound and Vibration*, *Molecular Biology*, and *Zoology*.

In 1982, the London company was on target for a turnover of more than £12m. But profits remained low and funds were sucked out to the US parent company. A disastrous decision to buy and equip a new central London warehouse also cost the company dear, with the old warehouse in Kent still in full use.

Mr Anthony Watkinson, a former senior editor said: "I left because I could not do my job properly. The company was caught in the middle of battles between second rate accountants. It was just not managed well."

The National Union of Journalists, representing staff facing dismissal, has decided to resist the proposed redundancies. The union complains of a catalogue of managerial errors which led to the company's collapse.

Fears have been raised that the dissemination of British scientific ideas will be seriously affected by the company's demise. But most scientists linked to AP appear to have been expecting further problems.

Mr Norman Clark, secretary of the Institute of Mathematics and its Applications, said he thought there would be no great problem in finding other publishing outlets. The institute has worked with AP since 1968 and has 30 titles in progress.

AP has made it clear that it plans to keep its journals division in London.



"JUST BECAUSE HE'S BEEN ON BLOODY OPEN UNIVERSITY!"

Will to give

A private benefactor has left Hertford College, Oxford, £50,000 to establish a senior scholarship in geography. The money has been left in the will of an American, Mr Mortimer May, whose son died while studying at the college.

The student newspaper also claims the pensioners from two flats to one for Dr Hills, Mr McGowan said he could not remember the exact sum, but it had been "several thousand."

The Telegraph says costs of reconverting the penthouse to two flats has been quoted at £3,000, but that it is likely "the actual figure will be in considerable excess of this."

The student newspaper also claims the pensioners from two flats to one for Dr Hills, Mr McGowan said he could not remember the exact sum, but it had been "several thousand."



Professor D. W. N. Stibbs, director of St Andrews University Observatory (and wearing the number 202), leads the 14-kilometre astronomy City-to-Surf run which he inaugurated last year. The run, held on St Andrew's Day, was successfully completed by all 50 runners, most of whom were astronomy and astrophysics students.

NUS leadership faces criticism on both sides

by David Jobbins

The Labour leadership of the National Union of Students is facing criticism from left and right over its attitude to other political groups on the eve of what could be a testing weekend for its long-term hold on the organization.

Two separate complaints from almost the opposite ends of the political spectrum threaten to call into question the commitment of the National Organization of Labour Students to "pluralism."

The Communist Party student organization this week accused NOLS of reneging on a commitment not to oppose its candidate, Ms Cathy Ley, from Manchester University, in a "straw poll" to fill a vacancy left on the executive by the resignation of another CP member, Ms Janis Robinson.

According to CP student organizer Mr Chris Paulson, NOLS leaders were insisting until the weekend that they did not want to run a candidate and thereby block CP representation on the executive.

But at the weekend, the NOLS council voted 35-15 to run its own candidate, Ms Lesley Smith, from Essex University, although NUS president

Mr Neil Stewart spoke against, apparently supported by most of the NOLS NUS executive members.

A leading advocate of running a candidate was Mr Tommy Sheppard, NUS vice president, welfare, who this weekend faced a move at national conference a move to "no confidence" him for allegedly transplanting Labour policies in the latest NUS policy document on education.

The NOLS minority believes Ms Ley should be opposed because she is standing under the umbrella of the Left Alliance, which lost control of NUS to Labour in 1982.

Mr Simon Spalding, the sole Conservative on the executive, complained this week that he was not being allowed to play a full part in the organization's activities because of the attitude of Labour students. He had been given only a minor responsibility and had experienced difficulties in obtaining official documents.

"When I was elected there was the standing joke about the token Tory - but this is very much the way NOLS is perceiving me. They have got me on there and now I am expected to be pushed as far in the background as possible so as not to cause trouble."

The Association of County Councils has had a change of heart and called for the life of the Advisory Council for Adult and Continuing Education to be extended for 10 years with a review after five.

The ACC's education committee met last week and reversed a previous decision to accept the council's demise and for the work to be taken over by the National Institute of Adult Continuing Education.

Now the county councils want the ACC to carry on and to concentrate its work on helping people to become more articulate along the lines of the Adult Literacy and Basic Skills Unit.

Mr Peter Brooke, the under secretary of state responsible for adult education, has not decided about the future but would prefer a unit attached to the NIACE to take over the association's development role.

He met with the Association of Metropolitan Authorities which tried to persuade him to set up a national development council. The AMA is worried that the Manpower Services Commission, with its new interest in adult training, is moving into the vacuum left by the defunct ACC.

The AMA hopes for a further meeting in the new year before a decision is finally made.

There is also concern among the authority associations over lack of representation on the NIACE if it should take over the new responsibilities. The authorities collectively provide around £70,000 to run the institute and are not entirely happy about its make-up.

The Inner London Education Authority has written to Sir Keith Joseph, Secretary of State for Education and Science, supporting a national development council. The authority wants to see further consultation with the AMA if a contrary decision is taken.

High-rise row over top flat

Strathclyde University's student newspaper has alleged the court is contravening University Grants Committee regulations in buying a new residence for the principal.

The court has agreed to pay half the cost of a new home for Dr Graham Hills, who is currently living in a penthouse at the top of a 14-storey teaching block. Proceeds from the eventual sale of the new house are also to be divided equally.

The *Strathclyde Telegraph* claims that no limit has been put on the total cost of the new house, implying there has been no accurate budgeting, in contravention of UGC regulations.

But Strathclyde's bursar, Mr Louis McGowan, said this was "absolute rubbish" although he would not disclose the ceiling placed on costs. Some £90,000 had been realised from the sale three years ago of the house of the former principal, he said, most of which had been invested and would be used for the new purchase.

Some funds had been used to convert the penthouse from two flats to one for Dr Hills, Mr McGowan said he could not remember the exact sum, but it had been "several thousand."

The Telegraph says costs of reconverting the penthouse to two flats has been quoted at £3,000, but that it is likely "the actual figure will be in considerable excess of this."

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DON'S DIARY

MONDAY

Set off early to BP Buildarobot competition "Challenge to Youth" at the school of electronic engineering, Abingdon, Berkshire. Two years ago I would have driven but now I take the train and frequently the longest way out. As far as I am concerned this is the age of the train.

I was amazed by the versatility and ingenuity of our youngsters at this exhibition—sadly only two girls were involved but happily one was in the winning team. I was delighted to have been invited by BP.

Late afternoon I managed to pay a flying visit to County Hall to discuss the National Advisory Body review and other mutual preoccupations. It is always heartening to find administrative colleagues surrounded by even more paper than myself. Someone must, however, break the mould.

Early evening, meet my wife outside a tube station and we visit the home of the university chaplain. A number of principal colleagues were there and we shared a relaxed social occasion which was a great credit to our host and his wife.

Meet an old schoolmate, now director of a neighbouring polytechnic. We discuss those vintage years and how excellent he was as the porter to my Macduff.

Depart from my wife to go to Maria Assumpta for a rehearsal with Chelsea Opera and arrive home very late. There appear to have been no problems during my day's absence.

What a relief and how nice to find one is thoroughly dispensable.

TUESDAY

Open conference in college on the Youth Training Scheme and its curriculum implications for Avery Hill College courses. The conference is held on our residential site so I do not have to walk very far. Walking is a growing habit now that my exhaust has packed up.

The conference goes very well, everyone seems well motivated and at the end of the afternoon the main guests join me for a discussion over tea. Let us hope that next week's conference on teacher quality goes as well. Again I am struck by the potential liberating effect of a great deal of the YTS curriculum proposals.

Early evening I take the dogs for a walk round the grounds. Some of the few young lads trying to climb in over a wall, and again feel reasonably satisfied. Is this the calm before the storm?

In the evening I talk with Jeffrey, my youngest, about his forthcoming university exams. Chastise my middle child over the phone for getting me theatre tickets for the wrong day, thumb through teacher quality for the thirteenth time, reading again with wonder at Catch 22, and even, quite fall asleep with Trotsky, my latest acquisition—a six-month fully-fledged, thoroughly invulnerable cat.

No fox would disturb his equanimity.

WEDNESDAY

Meetings all morning with senior staff about various proposals relating to staff development and how we can our courses. I see about 15 staff in all and feel heartened that the message about "retrenchment" is getting through. At the same time we all share and explore the cost of undue retrenchment.

Again I yearn for clarity on costing. In quantitative terms, I recall PIP's plaintive response to Mr. Jagger's inquiry as to what he supposed he was living by the rate of "Is my benefactor to be made known to me today?" Will the NAB be our benefactor?

Academic board in the afternoon and it invades the twilight zone. A long agenda and only one item is deferred. Again I am concerned about paper and the dangers of confusing activity with action.

In the evening I take the student president out for a drink of Malibu and come back to find that another principal has phoned and my wife admits she said I was out with the student president. What will become of me?

THURSDAY

The car is repaired. In spite of this, catch the train early to County Hall and experience the mad 8.30am crush at London Bridge. Why didn't I check the train beforehand and when will I learn that Cannon Street is not on the same line as Waterloo? A useful meeting with various colleagues and then race back to Eltham to meet heads of departments. Mid-afternoon finds loads of gas pipes in my back garden. I have too much responsibility already and cannot offer security so I get them moved. Feel quite proud—they were moved within half an hour of asking. Where to I wonder? Perhaps Solomon, my youngest dog, will find them.

Late afternoon I managed to pay a flying visit to County Hall to discuss the National Advisory Body review and other mutual preoccupations. It is always heartening to find administrative colleagues surrounded by even more paper than myself. Someone must, however, break the mould.

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FRIDAY

Yes, again, we are on the front page of *The Times*. Chair the publicity meeting and then find the great hall has been invaded and some renovation is beginning. Have visions of grandeur. What will Magnus look like in the great hall?

In the lunch hour rehearse Sullivan's *Cox and Box* with two colleagues and a student. At least we are dramatizing effective and efficient use of resources. Wonder who will come to see/hear it?

In the afternoon I wander round the building and wish again we had a lift in the lower block. Receive an irate phone call from a local head-teacher and make a sweet and reasonable phone call to an Inner London Education Authority official.

SATURDAY

Early morning on the road to Winchester in the fog to sing with Chelsea Opera in Gloucester. Marilynn, bless her, drives me, but under my direction we go via Guildford and Dorking and arrive rather late.

Find time to look at King Arthur's table and visit the cathedral before the final rehearsal in Winchester College's amazing new hall. This must be one of the most magnificent of all halls to sing in. My wife meets me for a quick snack and then the performance.

Know by Marilynn's face in the audience that she is loving it all. Why can't I share my love of opera with her? The sheer purity of the music takes me away from all trials and tribulations.

We arrive back late. Mother and father have come for the weekend and we have neglected them.

SUNDAY

Early communion and then take mother and father to Greenwich. See at ops with General Wolfe. Something to do with Abraham and heights. The dogs make a dreadful noise and I begin to look forward to Monday.

The really great joy and enjoyed the present and I never seem to. It's this planning, that makes the future overtake. I must stress the importance of the present next time I speak at a school award ceremony, or talk with young people.

Read Piers Plowman *Pastorale* and marvel again at its richness and comprehensiveness. Langland was so way ahead of his time and certainly had a great deal to say about extending opportunities and growth.

Plot the next day and yet again forget the past and present. It is Mlle. End campus in the morning and I am sure that will bring me back to the present and reality.

Michael Lovitt

The author is principal of Avery Hill College.

Aberdeen merger talks begin

by Olga Wojtas
Scottish Correspondent

The Secretary of State for Scotland is seeking talks with Aberdeen University's principal on a prospective merger of the university with two colleges.

Aberdeen University's chief called on Mr George Younger, the Scottish Secretary, and Sir Keith Joseph, the Secretary of State for Education and Science, last February to set up an independent inquiry on a merger with the neighbouring Robert Gordon's Institute of Technology and Aberdeen College of Education.

Mr Younger has now asked George McNicol, the principal, to meet him next week. In his letter, Mr Younger says he has given the merger proposal "most serious consideration" and has been in consultation with Sir Keith on what the Government's response should be.

They have decided it would be helpful to hold discussions with the principal before making a final decision.

Meetings are also planned with the principals of the RGIT and the college

of education, and the chairman of their boards of governors, but no date has been set.

Both the RGIT and the college, neither of which was consulted by the university before the merger call, have so far been very guarded in their reaction to the proposal. But there is a strong feeling that their future would be more secure under the Scottish Education Department than the University Grants Committee.

Professor McNicol told the meeting of the university's general council at the weekend that he was disappointed ministers had not yet made a positive response.

But he added that he hoped an inquiry would be set up as a result of the talks, both in the national interest and the interests of the university and the two other institutions.

All parties would benefit from a more rational use of higher education resources, said the principal, but he recognized that a union could take place only if terms and conditions were negotiated "on the basis of generosity".

Professor McNicol continued history and sentiment, but the proposals of the court present the coming of a historic opportunity to enhance the contribution which all three institutions can make to the quality of education and the culture and prosperity of the country.

Professor McNicol announced that the university had made a surplus of more than £500,000 in 1982/83 and provisional estimates suggest another surplus in the coming year. This would give the university the opportunity to recover its equilibrium and think about long-term planning and development, he said.

But he warned against the UGC's suggestions of a one or two per cent annual cut in the unit of resource, which he said would fundamentally impair the university's work.

"I very much hope wider control will prevail and steady state funding from government resources will be maintained to permit us to make an appropriate contribution to national well-being," he said.

Engineering Council takes on DES

by Jon Turney
Science Correspondent

The Engineering Council has finished setting up its machinery for course accreditation and registration of professional engineers, and can now spend more time on policy matters. Its first job in education policy will be to win the battle with the Department of Education and Science and the University Grants Committee for extra money for extended and enhanced degree courses.

The council announced this week that all 53 professional engineering institutions which were recognized by the former Council of Engineering Institutions have become "nominated bodies" under the council's charter and bye-laws, recently approved by the Privy Council. This marks the end of a long, complex transfer of responsibility from CEI.

The names of the 280,000 engineers registered by the CEI now reside in the Engineering Council's computer. And the engineering institutions have agreed on a division into five administrative groups—mechanical, civil, electrical, process and transport.

This means the council can now devote more attention to the "engine of change" function spelled out in the Finlayson report on engineering.

Here, a major hurdle next year will be securing funds for the improvement in undergraduate courses outlined in the council's education policy document earlier this year. Council members indicate that the DES approves its proposals—which include a target of 20 per cent of the engineering student intake in universities going on to four-year courses—but will not find extra money.

So the DES and the council between them must persuade the UGC to transfer enough money to engineering and science within the existing university budget to cover the enhanced engineering curriculum. The council will be meeting the UGC early in the new year to put the case for such a shift.

Bristol Poly in closures protest

Bristol Polytechnic students will be meeting under secretary of state for higher education Mr Peter Brooke next week to protest about the proposed closure of two courses.

The National Advisory Body wants to close the BSc technology with industrial studies and the BSc (Hons) in environmental health. The polytechnic, however, is claiming that one decision is based on one of date information and that no justification can be found or has been given for the second.

The technology course received a critical report from HM Inspectorate in June but the college says this was based on a visit made in 1981 since when the course has changed considerably.

The decision to close the environmental health course is "irrational". It is being made because of a current shortage of environmental health officers.

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All-party campaign to defend ILEA

by Sandra Hempel
Further and higher education in London could be completely fragmented if new Government proposals on the future of the Inner London Education Authority become law, Mr Neil Fletcher, chairman of ILEA's further and higher education committee said this week.

Speaking at an all-party campaign launched by the authority this week to oppose the Government, Mr Fletcher said that the present close ties between ILEA members and the polytechnics in particular would be lost if the members were replaced by borough representatives whose only concern was for local services. "It would wreck the concept of higher education being a service for the whole of London," he said.

There would also be financial problems. The advanced further education review would be jeopardized because of uncertainty about the future level of

funding. The move towards greater access to further and higher education, particularly in relation to the University of London, would be threatened. "It could kill off everything that is happening in this area," Mr Fletcher said.

Labour, Conservative and SDP members have all warned of disastrous consequences for education in inner London if the Government's proposals became law.

The ILEA's leader, Mrs Frances Morrell, said that as the relationship between Labour, Conservatives and SDP at County Hall was not normally "one of cosy unanimity" it was all the more remarkable that the politicians had reached a communal view on the future of the authority.

Mrs Morrell was sharing a platform with Dr David Avery, Conservative deputy leader, and Mrs Anne Sofer, SDP member, before attending a special meeting of the ILEA education committee called to agree the author-

ity's official response to the Government.

Among the special guests at the meeting were members of the House of Lords, including Lord Beloff, professor emeritus of government and public administration at Oxford University; Lord Stewart, former secretary of state for education and science and Lord Swann, former vice-chancellor of Edinburgh University; members of the House of Commons, including Peter Shore, Stewart Holland and Peter Bottomley; and religious leaders including the Right Rev Ronald Bowlby, Bishop of Southwark and the director of the London Central Mosque and Islamic Cultural Centre, Dr A. A. Mughram Al-Chamdi.

The authority's official response to the Government is contained in a report by its education officer which makes out a case for a single administration for inner London education and points out constitutional and

financial disadvantages to the new plans.

"It is wrong for the Government to regard the authority as a toy that it can remodel from the vantage point of Whitehall," Mrs Morrell said.

A joint board responsible for education in inner London and comprising members of individual borough councils with no knowledge of education was terrifying, Dr Avery said. He predicted a "near paralysis" of the system. "I cannot imagine it," he said.

Mrs Anne Sofer said there were both financial and constitutional dangers in the proposals. "I have a firm belief in decentralization and these are the most centralizing measures that have been taken towards local government since local government had control of education," she said. It was particularly important in inner cities to have an education authority that was fully responsible for its electorate.

Versailles robot plan in danger

Proposals for international collaboration in robotics research which were mooted after the Versailles economic summit in 1982 are in danger of foundering through failure to agree a detailed programme.

Britain will decide whether to try and go ahead with the programme, in which France and Japan were supposed to take the lead, after a meeting in Paris next month. So far the prospective participants, who also include the US, Canada, Italy and West Germany have not found areas of mutual interest which are narrow enough to application but speculative enough to avoid conflicts over commercialization.

The proposal in the working group report after Versailles envisaged collaboration on robots to work under water, exposed to radiation or in other risky environments. The British coordinator, Peter Davey—also director of the Science and Engineering Research Council's existing robotics programme—is now circulating suggestions for possible projects. The same list is being passed around in the other countries.

The technologies involved could include artificial intelligence, human-machine systems, manipulators, sensors and locomotion. It is likely the UK government would back a new programme of robotics research in these areas, but Peter Davey is uncertain if other countries believe it would be worth their while.

If no active collaboration on new research is forthcoming, the programme may go ahead with only two or three countries participating.

The collapse of the European summit in Athens earlier this week will prolong the delay in approving spending plans for the European Community's information technology project, ESPRIT. The £400m joint research programme is due to start next year, but Britain and Germany have withheld approval of the final budget pending resolution of the community's wider money problems—which now looks further away than ever.

Here, a major hurdle next year will be securing funds for the improvement in undergraduate courses outlined in the council's education policy document earlier this year. Council members indicate that the DES approves its proposals—which include a target of 20 per cent of the engineering student intake in universities going on to four-year courses—but will not find extra money.

So the DES and the council between them must persuade the UGC to transfer enough money to engineering and science within the existing university budget to cover the enhanced engineering curriculum. The council will be meeting the UGC early in the new year to put the case for such a shift.

Bristol Poly in closures protest

Bristol Polytechnic students will be meeting under secretary of state for higher education Mr Peter Brooke next week to protest about the proposed closure of two courses.

The National Advisory Body wants to close the BSc technology with industrial studies and the BSc (Hons) in environmental health. The polytechnic, however, is claiming that one decision is based on one of date information and that no justification can be found or has been given for the second.

The technology course received a critical report from HM Inspectorate in June but the college says this was based on a visit made in 1981 since when the course has changed considerably.

The decision to close the environmental health course is "irrational". It is being made because of a current shortage of environmental health officers.

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SSRC must be money broker, says Hague

by Paul Flather

The Social Science Research Council would have to act much more as a "money broker" if it was to be able to fund new projects, Sir Douglas Hague, its chairman, said this week.

Sir Douglas was giving his first public speech at the annual general meeting of the Social Research Association. He remained optimistic about the future while making it clear there was little scope for funding unless it was found from new sources.

On this front he reported good progress without revealing any details. He said the council would be developing as a money broker, matching pound for pound what was raised from other sources such as industry, commerce, and local authorities.

Recent examples of this new style include the Franco-British agreement with each side putting up more than £1m for joint research and exchange schemes, and the agreement with Robert Maxwell, the publishing millionaire, sharing £130,000 to rescue this year's general election survey.

The council has faced budget cuts of more than 30 per cent in real terms since 1979, and is currently trying to absorb a 20m spread between 1982 and 1985. Existing commitments mean

there is little money for new projects and training awards.

Sir Douglas however drew attention to the recent assurance in a letter from Sir Keith Joseph, the Secretary of State for Education and Science, that the council would "not be torn up again by the roots" by a later-day Rothschild-style inquiry for at least three years.

He went on to promise full council backing for new style American doctoral programmes with a first year taught methods course. This would mean choosing manageable theses that concentrated more on competence than originality, as at present required.

Sir Douglas told his audience of 100 that a number of institutions had already responded to the idea and full proposals would be published early next year.

He went on to defend the system of allocating student awards by "open competition", which next year will apply to half of the council's awards on offer up from 30 per cent.

Sir Douglas described the shift as a "radical" change and said he was aware problems in the pattern and quality of funding could arise. He asked for a thorough review after three years with reforms if needed.

Mr Cross said the heavy emphasis on "open competition" would almost cer-

tainly mean that attempts to introduce the much-needed American style postgraduate degrees were almost certain to be "stillborn".

Mr Cross, who has chaired a training sub-committee of the Social Research Association, was speaking in a later session after the conference had heard Sir Douglas Hague, SSRC chairman,

promise full support for the US-style degrees.

The new style US degrees, which would provide methods training, would not be able to start with so few awards on offer from the council and he urged members to lobby for a drop in the number allocated by "open competition".

Every university would be tormented by as many anxieties as beset an examinee waiting for the pass lists and for much the same reason, said Sir Alwyn.

"To what extent will our past record of outstanding scholarship and research influence the present assessment? How much weight will our own answers carry compared with those representing interests which may be at variance with basic educational aims?

"We are not dwelling, but since this is the third inquiry in so many years to cast doubt on the university system as we know it, we panic less easily than we used to."

'Open competition' awards plan challenged

A strong challenge to the SSRC's plans to allocate half next year's student awards by "open competition" was mounted at the conference by Mr Malcolm Cross, deputy director of the Ethnic Relations Research Unit at Aston University.

Mr Cross said the heavy emphasis on "open competition" would almost cer-



Sir Douglas: first public speech

UGC's 28 questions attacked

by Olga Wojtas
Scottish Correspondent

The principal of Glasgow University, Sir Alwyn Williams, has attacked the University Grants Committee's questions on the future of the higher education system.

Speaking at a graduation ceremony, Sir Alwyn said only a few of the 28 questions would elicit replies which could be reliably weighted and compared.

The questions had been hailed as part of a more open strategy to give everyone a say. But some should have been left to experts with access to the right data, he said, and he predicted that many comments would "not be all that well informed".

The question about the nature of universities and the consequences of some of the Leverhulme proposals on higher education could only be "genuinely attempted after collaborative studies among institutions across the range of higher education".

Sir Alwyn warned that the UGC might well be overwhelmed by a "flood of unprocessed material" from a large number of bodies. In 1981, the UGC was reported to be under severe strain with an increasing work-load being placed on a reduced staff. "Those days were studies in still life compared with what lies ahead," he said.

"The Department of Education and Science, which provides the staff for the UGC, must come to its senses and recognize, as did most universities when faced with the same problem, that cuts cannot be applied pro rata, but have to take account of the nature and burden of the work to be done."

"Unless the UGC administrations immediately strengthened, any good advice contained in the returns may well remain buried in the dross," Sir Alwyn said he could not anticipate Glasgow's reply to the UGC since this would not be considered until next term.

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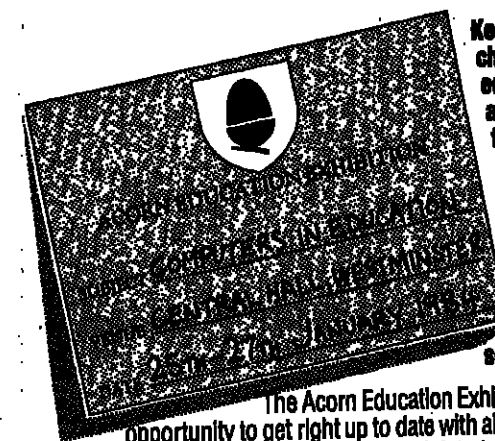
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news in brief



Keele v-c makes transfer to Exeter

Dr David Harrison, vice-chancellor of Keele University since 1979, is to become vice-chancellor of the University of Exeter, next October, when Dr Harry Kay retires.

Dr Harrison, aged 53, was educated at Bede School, Sunderland, and Clacton County High School. He took first class honours in part I and II of the natural sciences tripos at Cambridge University and became a research student and then assistant lecturer in chemical engineering. He has been a fellow of Selwyn College, Cambridge, since 1957 and was senior tutor from 1967-1979.

Chinese rocks

Agreement has been reached between the Scottish Academic Press Ltd and the China Geological Publishing House to publish in English *The Stratigraphy of China* in 14 volumes starting next year. The series on the geology of China is being compiled and written by over 150 geologists from 33 institutes in China.

Blind aids

New aids for blind people, including systems to help with reading and writing, have been launched by the Research Unit for the Blind at Brunel University. The unit has also produced an international survey of aids for the visually disabled.

General picture

Two college associations have opened a new joint national office based at Gurnett College, Roehampton. It will gather a national picture of aspects of further and higher education for officers and members of the Association of College Principals and the Association of College Registrars and Administrators.

Earth moves

The University Grants Committee has given the go-ahead for a new £24m earth sciences building for London University's merging Bedford and Royal Holloway colleges at Egham, in Surrey. The money will come from the eventual sale of Bedford College.

One of TV's growth industries is Michael Heseltine. Demonstrations, CND marches, nuclear horror films and red paint stand a good chance of making him the leader's face apparent.

There is a lot more to the man than the hair and the oratory. He is the first - and only - Cabinet minister truly interested in improving management in government. He dismissed the Department of the Environment by 26 per cent while extending its activities in the inner cities. The Ministry of Defence of course poses a more acute challenge, for it employs a million people and has a civil service complement which is four times that of the DoE.

What is less known is his interest in ideas. The departments he has been in charge of are teeming places. He brings them with exhilarating ideas and schemes, whether it is American-style matched funds for the cities, increased competition in defence contracting, or private sector secondment.

On a smaller scale, he has called for closer contact with the academic

Book survey reveals lack of knowledge

by David Jobbins

More than half of first year students have no prior idea how many books they will need or their cost, according to a survey of book buying.

Only 12 per cent knew fairly well how many were required, while 23 per cent had a rough idea, findings from the study commissioned by the Publishers Association and British Library, indicates.

Only 5 per cent had an exact idea of books needed, probably either from a college list or from a lecturer. Some had worked it out for themselves, according to the survey. A total of 39 per cent of first years bought books before going up to college - an average

of 1.9 books per student.

First year students also proved to be more prolific book buyers than their second and third year colleagues. A massive 99 per cent bought recommended titles and 32 per cent other books related to their fields of study compared with 94 per cent and 23 per cent for second year and 82 per cent and 24 per cent for final year students.

Overall, 92 per cent of students bought 7.4 books per head at an average cost of £5.34 per title. But 72 per cent will not buy at least one book recommended by their tutors.

Most (87 per cent) of the books were paperbacks, 16 per cent of them secondhand. Campus bookshops were the source of recommended titles for

39 per cent of students, with local bookshops a close runner-up at 34 per cent.

On average, students had spent £42.5 on books for the year up to April/May when the survey was done. This was made up of £39.5 on recommended and £3 on non-recommended but relevant books, almost exactly in line with the survey carried out by the National Union of Students which found an average of £42.96.

There was only a slight difference between university students, who spent an average £42.5 and polytechnic students who spent £43.1, but arts students spent substantially more (£47.8) than science and technology students (£37.3) or social science stu-

dents (£40.1).

Women students, therefore, had a much higher than average outlay (£47.6) than men (£38.7). Bookshops emerged from the survey with a fair vote of confidence from students. They were considered helpful by 81 per cent of university and 73 per cent of polytechnic students.

A majority of students, 57 per cent, found the books they wanted in stock. The average waiting time for ordered titles was 3.2 weeks but 13 per cent had to wait more than five.

Student Book Buying, published by the University College and Professional Publishers Council of the Publishers Association, 19 Bedford Square, London WC1B 3HU.

'Unsuitable' graduates rejected

by Patricia Santinelli

Several universities and polytechnics appear to have jumped the gun by rejecting graduates for postgraduate education courses because their first degree was regarded as irrelevant for prospective teachers.

The Association of Graduate Careers Advisory Services says it is extremely concerned by the number of individual students coming forward. They claim they have not been accepted by institutions because their previous studies were not deemed suitable.

The AGCAS says that institutions seem to have overreacted. They have taken the Advisory Committee on the Supply and Education of Teachers' recommendations to the Secretary of State for Education and Science as already accepted and also insisted that candidates for secondary postgraduate Certificates of Education should have a degree in their chosen teaching

subject.

In fact ACSET's advice only mentions two years of undergraduate studies in the chosen subject and not a full degree.

The association says that in one case a graduate in politics was turned down for a secondary postgraduate certificate of education on these grounds. Last year such a degree was regarded as perfectly acceptable.

It adds that there is also evidence that social scientists are finding it very hard to convince primary admission tutors that they did a relevant course. The first indication of the first subjects deemed suitable for primary teaching came in a DES document *Teaching in Primary Schools* this summer. This listed English, maths, science, history, geography, arts, music and religious studies as relevant.

The AGCAS says it has had confirmation from both Sir Keith Joseph, Secretary of State for Education, and from Mr Robert Dunn, junior educa-

tion minister that although the restrictions were reasonable, they had not been introduced and before they were a suitable period of notice would be applied.

Moreover when the Earl of Swinton replied to a parliamentary question put by Baroness David, the Labour spokeswoman on education in the House of Lords last week, he confirmed that the Government had not yet made its views public on the matter. He added that as yet no particular degree subject had been singled out as being suitable or unsuitable for intending teachers.

The AGCAS now plans to send a circular to all heads of careers services in institutions both to bring them up to date and encourage them to take up individual cases.

It hopes that other departments will be supportive because the restrictions are bound to affect many of their students intending to become teachers.

Cambridge recoups overseas student losses

More overseas students are now at Cambridge University than at any time in the last 10 years and the trend is upwards despite the full-cost fees they now have to pay.

Figures just released by the university illustrate the Cambridge success story, with 1,037 overseas and 149 EEC students accepted for entry in October. This compares with the 1,061 overseas students taken by Cambridge 10 years ago.

The table below shows how overseas student numbers declined steadily between 1973 and 1980/81, the year full-cost fees were introduced for all non-EEC foreign students. After that, numbers dipped further to an all-time low around 1981 which amounted to about 8 per cent of the total Cambridge student population.

By then Cambridge had drawn up plans for worldwide efforts to raise fresh funds to attract and support able foreign students despite the higher fees, as well as to publicize the merits of the university.

Senior Cambridge dons were dispatched round the world to tie up agreements with government heads and industrial magnates. The commit-

Overseas students at Cambridge University	Total	as % of student total
1973/74	1,061	8.85
1974/75	1,121	10.34
1975/76	994	9.16
1976/77	968	8.80
1977/78	959	8.69
1978/79	907	8.74
1979/80	875	8.60
1980/81	799 (930)	6.98 (8.10)
1981/82	779 (935)	6.88 (8.02)
1982/83	827 (976)	7.23 (8.53)
1983/84 (provisional)	1,037 (1,160)	8.90 (10.18)

Note: Numbers in brackets are EEC students reclassified because they pay home rate fees.

Source: *University Reporter* p.179, November 30 1983.

tee on awards widened its horizons, the Cambridge Commonwealth Trust, the Cambridge Livingstone Trust, the Friends of Cambridge in Hongkong all blossomed.

The university is still pursuing new arrangements with countries like

Kenya, Ghana and Nigeria, but it remains unhappy with the money raised in Australia and Canada so far. Even so this year 242 overseas students at Cambridge were supported under the various schemes.

Commonwealth schemes backed 31 graduate and 33 undergraduate foreign students, 12 graduates were supported from China, a further six from South Africa and 137 graduates and one undergraduate received bursaries of some form. Before 1980 very few foreign students received support.

The university is naturally well satisfied with the trend which contrasts sharply with numbers attracted by most other universities. An official said: "We always thought we could continue to attract the very able students. But as these figures show we have not only retained our numbers but greatly increased them and we are very pleased."

The trend for overseas student entry to all universities also looks brighter. Latest figures from the Universities Central Council on Admissions show a 27 per cent increase in overseas student applications.

Grant aids Fellowship ambition

by Jon Turney
Science Correspondent

The Fellowship of Engineering will receive a Government grant next year, marking an important step towards its ambition to become the engineering equivalent of the Royal Society.

The Fellowship, founded in 1936, received a number of small grants for work in education and training from the Science and Engineering Research Council this year. But it will now be given a separate grant-in-aid under the Department of Education and Science's science vote. The new grant, to be announced with the rest of the science budget at the end of the month, is expected to start at around £150,000 a year.

This compares with the £5m a year the Royal Society receives from the same source - but the Society did have a 300-year start. Administratively, the grant puts the Fellowship on the same footing as the Society, as an independent advisory group with government support.

The money will help the Fellowship expand to fill the whole of its London premises, where it has just taken over space vacated by the now defunct Council of Engineering Institutions. The Fellowship now has over 500 members, elected by ballot in the same way as fellows of the Royal Society.

It is developing a role as an advisor on engineering matters to Government and industry. Current working groups of the Fellowship include studies on education and training for engineers and the need for a national technology policy. Both are expected to report next year.

Fellowship officials stress that these activities will be developed to complement the Engineering Council, also partly government-funded, and not in competition with the Council. Viscount Childs, the Fellowship's president, was a founder member of the Engineering Council, and the Council's director-general, Dr Kenneth Miller, is a member of the Fellowship.

PARTY LINE

More to Michael than hair and oratory

world. He has just established forty-eight lunchtimes at which a couple of people from the ministry and three or four from industry and the universities can kick around anything they like with him, as the mood takes them.

When I started looking around for willing guests to attend these lunches, I was struck by how good war has been for academics. One of the fastest growth areas of higher education has been 'war/defence' postgraduate studies. Not that the growth is just obvious. The old lecturer keeps popping up in politics, defence, international relations and economics departments as well as specialist centres, institutes and departments of war studies. There are also those specialising in 'current strategy and more in his

theory or related fields like terrorism or peace.

The problem about labels such as 'peace studies' is that they suggest results that are somewhat preordained: Bradford's centre of peace studies is a noted radical department, but is it too radical to be absolutely fair, some might ask.

Anyway, peace is popular; something called peace education is now being pushed on to our secondary schools in some counties. I have just read proposals by working parties in Lancashire and Nottinghamshire.

I am not very much clearer as to what is meant by peace education. Some of Nottingham's curricula ideas involve 'a study of the Brundage report', 'examining with a town in the world', and of course

pupils should be "encouraged to role play situations of significance to peaceful coexistence". Studying the UN Declaration of Human Rights and "its practical application within the school" might have disastrous consequences for Nottingham schools. Then one wonders just what objectivity the authors had in mind when they called for "a study of the case for peace based upon a balance of military power". Why, I wonder, should peace studies include the treatment of offenders? Well, the Lancashire paper gives us the answer: peace - which, supposedly, the exercise is intended to promote - nevertheless may conceal, so it argues, "great injustices of what is sometimes referred to as latent violence". So obviously teachers should go beyond "techni-

tion for disarmament" to consider those "social problems that lead to violence", such as football crowds and the situation in Northern Ireland. Ultimately, Lancashire's aim is "to develop an understanding of the interdependence of individuals".

Wonderful though that is, my first reaction was thank goodness we are still a long way off a centralized system in which left-wingers like Mrs Joile Farrington, who chairs Lancashire's education committee, can impose their view on the curriculum. But then I realized that the good sense of most teachers will prevail; but these documents are not so much sinister as stupid. More's the pity that so much time and money has to be diverted into efforts which clearly warrant the Golden Bull Award for gobbledegook.

Keith Hampson

The author is Conservative MP for Leeds North West

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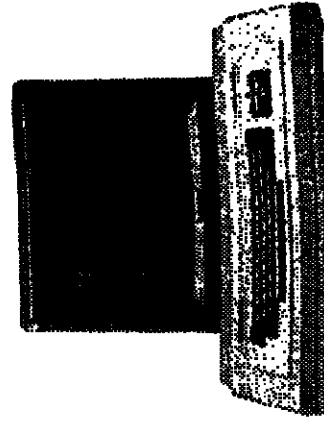
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The Chief Authority is currently running one of the fourteen original TVEI Projects in five of its secondary schools and this Project will be linked with a Technical/Vocational Centre from September 1984.

The Education Committee has now approved a further development of TVEI-type curricula in a further eighteen secondary schools with effect from September 1984. These secondary schools will be organised for this purpose in a variety of arrangements (consortia, trios, "mushrooms", etc.).

The Technical Vocational Centre at Bodelwyddan and the eighteen schools will be seeking to recruit additional well-qualified staff in the following fields for September 1984, some posts being available at Senior Teacher Scale, others at Scales 4 and 5.

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(Please use the reference TVEI/AF in any correspondence).

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Bid to block extra head office staff

by David Jobbins

An attempt to block moves to build up the head office staff of the university lecturers' union rather than employ more regional officials will come to a head next week.

A plan to add a fourth assistant general secretary to the head office strength of the Association of University Teachers and endorsed by the union's executive, is to be opposed by members who feel that priority should continue to be given to regional staff.

They will argue that a paper setting out the majority executive view should be remitted when it comes up for approval at the AUT's winter council meeting in Hull next week to allow fuller consultation with the membership.

Dr Joe Taylor, of the minority on the executive who argued against the proposals, said: "I think regional officials have proven their worth and would like to see the AUT restructure itself on a regional pattern. Certainly we should not entrench the centralized approach at this stage."

"I think that if we decide to appoint another headquarters official we will not be appointing any further regional officials. I would be glad to be told I am wrong but I suspect this will be the case."

There are three pressures in support of extra headquarters staff. First there are growing demands by sectional groups within the union - research staff, librarians, administrators and women among others.

Second, as outlined in a paper presented to the executive, Government policies are expected to mean

stricter controls on higher education in the future and an AUT response "will inevitably have to come from the centre".

The paper adds: "Resources at headquarters are already stretched and much work is already having to be put on one side."

Third, the AUT's membership is falling. It dropped by 8 per cent during 1982/83, greater than had been anticipated, and a further fall of 7 per cent for the current period has been assumed for budget purposes.

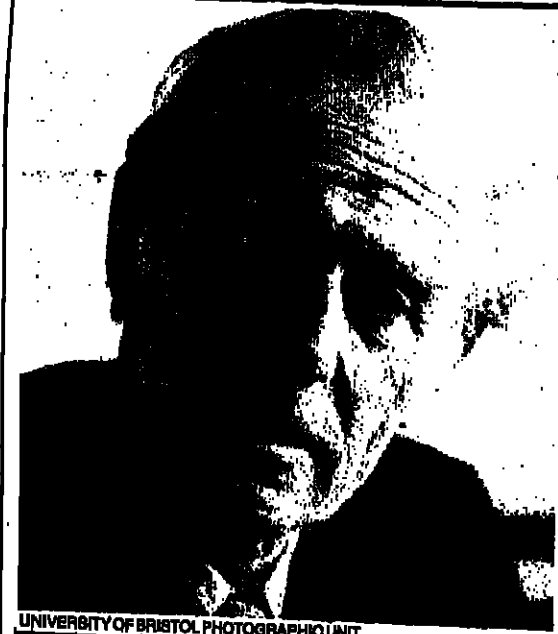
Although there was a £60,000 surplus in 1982/83 this may turn into a £80,000 deficit for the current year, which the AUT aims to meet from reserves. But union leaders are to argue for a subscription increase of 20 per cent for next year at the union's May council.

Against this background of declining income an extra official whether at head office or in the regions would cost £30,000 or an extra 5 per cent increase in subscriptions.

The executive's conclusion was that a system of regional officials would cost far more than expanding headquarters services.

A regional structure has significant support among AUT activists. A resolution demanding fully-costed proposals was referred back to the executive last May so that a review of workloads could be carried out. How far council delegates are convinced by the competing claims will be tested next week.

The AUT has appointed three regional officials - the first in the north west, and others in Edinburgh and London.



UNIVERSITY OF BRISTOL PHOTOGRAPHIC UNIT

The University of Bristol's drama department will tonight honour Emeritus Professor Glynne Wickham, who was head of department from 1955 until his early retirement in 1982. The Vandryke Theatre, which since it opened in 1968 has been used for teaching practical theatre skills and for presenting work by the department and visiting companies, is to be renamed the Glynne Wickham Studio Theatre.

Tribunal finds discrimination

by Olga Wojtas

Scottish correspondent

Lothian regional council was guilty of sex discrimination when it did not call a female lecturer for interview for a promoted post at West Lothian College of Further Education.

This was the finding of an industrial tribunal in a case brought by Mrs Phyllis Hay, formerly a staff member at West Lothian College, and now a senior lecturer at Reid College in Paisley.

Mrs Hay said she applied for the senior lecturer post in business studies, but received no acknowledgement. She was later invited to apply again since the post was being advertised, but was not called for interview. The post went to a male colleague, and when Mrs Hay asked why she had not been interviewed, she was told she did not have the necessary qualifications.

Mr Harry Forrie, principal of West Lothian College, told the tribunal that

the successful candidate had "absolutely excellent industrial experience" while Mrs Hay had worked mostly on the secretarial side. It was common for an applicant known to the appointments committee not to be called for interview, he argued, and Mrs Hay's application had always been considered.

The successful candidate, also a lecturer in the college, had been interviewed because he had spent some time working outside the college, while Mrs Hay had been there continuously.

However, Lothian admitted that Mrs Hay had eight years experience compared with her male colleague's three, and that she had undergone teacher training while he had not.

The tribunal found that the head of business studies apparently had surprisingly limited knowledge of Mrs Hay's qualifications and abilities, and ordered Lothian to pay £100 compensation for her injured feelings.

Edinburgh hits graduate jackpot

Edinburgh University has reached its target of £400,000 in donations from former graduates. The General Council of the university, which began its appeal in February 1982, has now received £400,000 from 400 former graduates, which will help fund a new £10 million building, described as an innovation in higher education.

The university now has a computerized register of over 60,000 former graduates, 2,500 of whom contributed to the present appeal.



The realities of quality and quantity

What a fine old mess the Council for National Academic Awards have put themselves into. First there was the clear and categorical pledge in March this year that they would "rank" courses in some kind of quality listing. Next there came the August silly season when, in a cold language decipherable by friends and enemies alike, certain institutions were described in words like "sound" or "satisfactory", and within academia all sorts of knowing "nods" and "winks" were exchanged.

And finally there was the awful saga of town planning courses, when at the end of the day the Council gave in and supplied the National Advisory Body with three groups of courses, each distinguishable on grounds of supposed quality. The fact that in the same paper which contained these ranks there also appeared a request for a "full triennial review" and hence a year's deferment, only compounds the bad error. The blunt truth is that had the council thrown its academic weight into that aspect of the NAB planning exercise, and thus embraced the totality of provision, it would have secured support from the National Association of Teachers in Further and Higher Education and from other bodies within the NAB.

However, while the CNAA response sold its own pass and effectively buried the possibility of a broader review of planning courses, there may still be time for a proper debate on quality to begin.

Thus if the CNAA and others are to engage in deliberations about the relative quality of courses then we need at the very least to initiate a discussion on what precisely is involved in such an exercise.

Also the weighting attached to the various criteria is far from clear. Thus how does "known potential for future development" relate to "support for the course by the polytechnic"? Also on what data base is the CNAA operating, since the periodicity of institutional and course visits is such that questions of datedness might well arise.

Again it is not clear just how the CNAA can deal with the theory issue of vested interest which when courses are evaluated by colleagues in the National University with faculties of arts, philosophy, science and Celtic studies.

At a potential university it has authority to confer degrees in theology, philosophy and canon law.

Two years ago it had 1,497 students made up as follows: postgraduates 309, theology students 406, seminarians 109 and "Others", mainly lay students taking arts, philosophy, science or Celtic studies.

Mrs Hussey has promised talks with the trustees of Maynooth all of them Roman Catholic bishops. She says the

resolution which emerges should satisfy their natural desire to assist and protect the life of the national seminary while at the same time satisfy the public interest in the development at Maynooth of a "great secular university" to take its place with its fellow colleges in Dublin, Cork and Galway.

From her statement it appears that she favours full independent status for Maynooth. But it will be difficult to get consensus on any new governing structures for Maynooth.

If the seminary is incorporated into an independent university, the bishops will not willingly relinquish majority. On the other hand the minister will be under pressure to allow greater public representation on to the governing body of an institution which gets most of its funds from the state.

A related question is whether or not she will seek to change the governing structures of Trinity College Dublin, the sole constituent college of the University of Dublin. There is far less "outside" representation on Trinity's governing structures than there is in the case of the other national universities or colleges or the National Institutes for Higher Education.

Research and tuition of psychology at West German universities are enjoying a leading international standing. A leading academic body has revealed. In a critical study, the government on higher education, has submitted a series of "recommendations" to improve the quality of German psychology departments.

The council, founded in 1957, used to concentrate its work on the expansion of higher education. With this nearly completed, it has diverted to the study of specific degree courses. Psychology was picked first because of the relative plight of the subject's departments, despite admission

Irish consider loans scheme

from John Walshe

DUBLIN

The Irish government is giving serious consideration to the introduction of a student loans scheme, coupled with massive increases in tuition fees for all third level students.

The loans idea is one of a number of measures being looked at by the government which is faced with an ever-increasing demand for higher education places.

Some details of the government's plans have been disclosed in a daily newspaper which published the main proposals contained in a forthcoming Four Year Action Programme, prepared by education minister Mrs Gemma Hussey. Other measures include a study of the feasibility of a four-term academic year, reduction of staff student contact hours in some colleges where the teaching class load is as high as 30 hours per week, rationalization of some courses and an investigation into the possibility of reducing some four year courses to three years.

The leaked plan confirms the government's intention to give greater emphasis to primary education and especially to disadvantaged children.

At the same time it says the government is committed to maintaining the present participation rate - 20 per cent of the relevant age group - in higher



Mrs Hussey: in a dilemma

education. But to do this would involve the creation of 40 per cent additional student places by the end of the decade because of the age bulge in the Irish population structure.

Trying to achieve the programme's objectives will involve the actual reduction in the incremental cost of higher education places. The proposal for loans is one way of achieving this - assuming the commercial banks co-operated - but it is also the one most likely to lead to controversy.

The intention, apparently, is to reduce the state commitment to institutions of higher education and

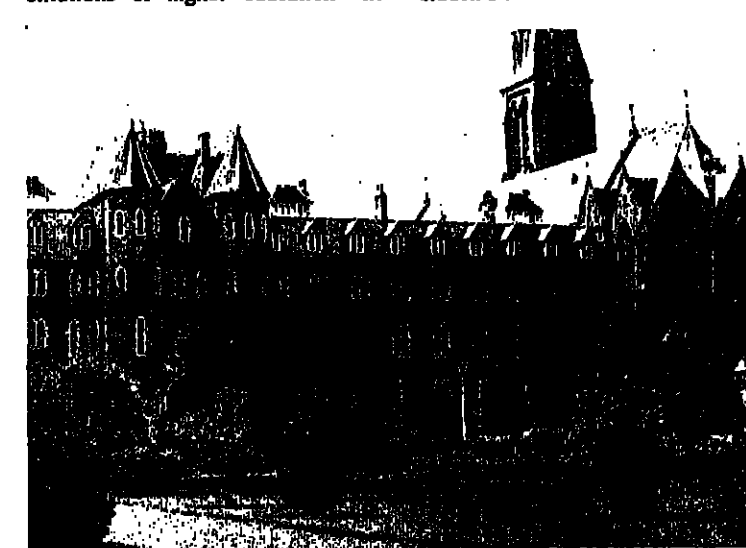
make students not in receipt of state aid (only a third get aid at present) pay higher fees.

At present tuition fees account for about 17 per cent of the income of the universities. Individual fees work out at anything from IR£400 to IR£1,000 and there are fears that these could be doubled in the next academic year. Fees in technical colleges are much lower and the percentage increase these students face could be much greater.

The minister has confirmed that she hopes to be in a position to make a definite decision early next year about the loans and the other measures but already opposition is building up.

The Union of Students in Ireland has been galvanized into action and has promised a vigorous campaign against loans. The main political opposition party Fianna Fail has stated that it would be wary of introducing a loans scheme at a time of increasing graduate unemployment.

But the minister is in a dilemma. If she does not take some drastic measures the government may not be able to maintain existing participation rates in higher education, already low by European standards. If she does take any other measures she is proposing she faces a storm of criticism from students and staff alike.



Maynooth: the bishops will not want to give up their power

resolution which emerges should satisfy their natural desire to assist and protect the life of the national seminary while at the same time satisfy the public interest in the development at Maynooth of a "great secular university" to take its place with its fellow colleges in Dublin, Cork and Galway.

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restrictions, and the growing public interest in the field. Placed between the social, medical and natural sciences, its problems touch on those of other faculties, the council noted, adding that its review should be studied as a "example and model".

Psychology has grown dramatically in Germany over the past 25 years. Between 1960 and 1982, the number of university places doubled, and psychology is now taught as a main subject at 36 universities, and as a secondary subject at a further 17. While the overall number of students grew fourfold during this time, that of psychology students soared tenfold although severe *numerus clausus* restrictions were introduced in the 1960s. There are now a total of 20,000

psychology students in Germany, and twice as many applicants at places available. At the same time, the number of academic jobs in the field has soared from 89 to 1,172.

However, this quantitative growth was never matched by a qualitative one.

To counter this trend, the body recommends the setting up of research groups specializing in particular areas within the individual psychology institutes. Tuition and degree courses, by contrast, should cease to be specialized and made to encompass a wider range of subjects. Degree courses should be extended to the three applied forms of psychology - industrial, clinical and pedagogical psychology.

Professors had to be specialists in their research but generalist in their teaching, the report stressed. It also urged a closer cooperation between academic bodies and institutions outside university, as practised in the United States and the Netherlands. Both prospective would lead to greater diversity and competition, and boost academic standards, it noted. Ultimately the most important was to raise a qualified successor generation. For this opportunities for postgraduate and post-structural work had to be improved.

Finally, the council called for a restructuring of the degree courses into a basic and a postgraduate course. The first, leading to a diploma, should be limited to eight semesters, the second restricted to six.

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Main speakers miss Stockholm conference

The sixth international conference on collective phenomena which took place in Stockholm last week had a most surprising feature. None of the four principal participants could deliver his paper in person.

This was not surprising. The four Russian scientists, Dr Viktor Brailovsky, Professor Yankov Alpert, Professor Aleksander Lerner and Professor Naum Meiman, are all *refuseniks* - Jews who have been deprived of their scientific posts after applying to emigrate to Israel. They are not allowed to emigrate on the grounds of alleged former access to classified information.

This is the first conference in the series to take place outside the Soviet Union. The previous five have all been convened in Moscow by the *refuseniks* themselves.

The international conferences on collective phenomena arose almost by chance out of the weekly Sunday seminars which the *refuseniks* began to organize in 1973. They are banned from participation in official Soviet academic life and denied access to libraries and laboratories.

Within a few months, Western scientists who were attending official scientific conferences in Moscow began to visit the seminars. It was decided therefore to convene a full scale scientific conference in 1974.

In order to cover as wide a field as possible the subject chosen was "collective phenomena and the application of physical methods to other branches of science".

Such a private venture was unheard of in the Soviet Union, but the organizers considered that it was perfectly legal, since freedom of assembly is guaranteed by the constitution.

Nevertheless, the security authorities would not allow the conference to take place, the foreign guests did not receive their visas, and the *refusenik* hosts were temporarily deported from Moscow. The proceedings of the "conference that never was" were subsequently published as a book.

During the next few years, three such international conferences were held in Moscow, without police interference. This was apparently a concession to *détente*, though not all intending participants received visas. From 1979 onwards, the situation of Jews in the Soviet Union began to deteriorate rapidly, and the planned fifth conference scheduled for 1981,

was once again blocked.

At the same time the "Sunday seminars" themselves came under increasing pressure. Viktor Brailovsky, who for several years had hosted them in his apartment, was arrested and exiled to Siberia. Nevertheless, by constantly changing the time and venue, the *refuseniks* managed to keep the seminars going and a few foreign visitors still attended, mainly from Scandinavia.

It was these visitors who came up with the idea of holding a sixth international conference on collective phenomena abroad. The programme, it was decided, should centre on the works of the Moscow *refuseniks* whose papers should be read by foreign colleagues, while other contributors would present papers related in some way to the *refuseniks* themes.

The venue should be Stockholm, the date as close as possible to December 10 (human rights day and Nobel day). The conference was opened, appropriately, by Dr Alexander Vronnel, the original chairman of the seminars, who was allowed to emigrate to Israel at the end of 1974.

Participants included Nobel prizewinner Paul Flory from the United States, Professor Sir Samuel Edwards from Britain and Professor Andrew Sessler from the US. One member of the conference committee, Professor Yves Quere, did not attend. He had managed to obtain a visa for Moscow where a parallel session had been quietly arranged for the weekend following the conference.

The somewhat unorthodox format of the meeting put considerable responsibility on those who volunteered to read the papers from Moscow, since these had to be transmitted by unconventional methods to the West. They arrived very late and, in the case of Dr Lerner's paper, with eight pages of vital mathematics missing.

Furthermore, although the presenters were chosen as far as possible from fields closely related to the *refuseniks* work, they were not always equipped to answer questions.

The fact that this conference took place at all reflects the desire of Western scientists to express sympathy and solidarity with their less fortunate colleagues. It can be counted too as an event of scientific value and not merely a novel human rights demonstration.

Stanford maintains senate secrecy

The professors' parliament at Stanford University has voted to continue its policy of barring outside media coverage of its meetings.

The Stanford Faculty Senate represents the university's teaching staff and the decision is at variance with the assembly's steering committee which recommended allocating three seats for outside news coverage.

While professors expressed a desire for "increased openness" about the senate's activities, they were also wary of "misleading" coverage by news reporters lacking background.

A request for permission to attend the closed meetings was initiated by editors with the *Yale Alto Weekly*. Outside press will have to rely on reports from the *Stanford Daily*, the campus radio station, and the official university news service.

Stanford students and schoolboys aged over 14 can now enlist "voluntarily" in the armed forces, with the right to continue their studies and the immediate rank of warrant officer. College graduates (under 28 years of age) who volunteer will be immediately commissioned as officers.

Although these new regulations refer to "volunteers", it seems likely that considerable moral pressure will be put on the students to volunteer, since the country is involved in a bitter war with Iran. The Iranians themselves are delighted, claiming that the scheme, which comes into effect immediately, is tantamount to the conscription of all young Iraqi males over 14 years of age, who until now were exempt from military service on educational grounds. The Iranians see this as proof that this is a direct result of their latest campaign against Iraq, which began on November 2.

If the Iranian appraisal of the situation is correct, and the "volunteers" are intended for immediate front-line service, then the Iraqi government's pledge that "volunteers" will be allowed to complete their education at evening classes must be considered as window-dressing. The decree setting out the scheme, however, with its details of promotion schemes, pension rights for "permanent" volunteers at retirement age 50, and a special seven-year contract (with a discharge gratuity) for "temporary" volunteers, suggests that Iraqi high command is concerned not so much to recruit cannon-fodder, but to build up cadres of commissioned and non-commissioned officers with the educational background needed to cope with modern warfare.

Students may 'volunteer'

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overseas news

'Working holidays' concern

Poland's scheme of "self-financing" holidays for students and school-leavers has been extended to cover term-time as well as the summer vacation. A group of young people who failed to gain a university place this year have gone to work in East Germany, with, apparently, some kind of understanding that this will virtually guarantee their admission to a Polish university next year.

Government-sponsored "working holidays" - with pocket money and travel expenses provided - are a familiar feature of student life throughout the socialist bloc, and provide a useful supplementary labour force for seasonal work such as fruit picking. Recently, however, party theorists in Poland have urged the political importance of tourism to such politically orthodox countries as the Soviet Union and East Germany.

Last month, a special plenary meeting of the Supreme Council of the Polish Students Association (ZSP) likewise stressed the "political aims" of student tourism, though this may not have been entirely disingenuous. A major practical issue of the meeting was the raising of funds for student tourism, and the ZSP leaders may have framed their remarks with one eye on possible Party subsidies.

The extension of the idea of working holidays to young people who hope to begin university studies in autumn 1984 has a certain logic. Many school-leavers were disappointed this year, owing to major cut backs in university admissions and the closure of courses - ostensibly for purely economic reasons but in some cases as a result of the political "verification" process introduced under martial law.

It is somewhat disturbing, however, that the would-be students taking part in the scheme have received assurances of a place for next year. Unless they are planning to read German, or are carefully assigned jobs closely related to their proposed studies, it is difficult to see how a year spent working in Germany will necessarily bring them up to admission standard.

The academic community continues to press for university admission to be on the grounds of strict academic ability, while the government has several times pledged itself to revive the current scheme by which selected young people from worker and peasant backgrounds receive additional bonus marks in their entrance examination. The idea that work experience in a socialist country should automatically improve an applicant's chances is unlikely to be accepted by the universities without protest.

Space contest

Oklahoma students are being invited to participate in a statewide competition to devise space experiments to be conducted on the space shuttle.

The competition is being conducted by the School of Mechanical and Aerospace Engineering at Oklahoma State University, headed by Craig Friedrich, who is also the technical, legal and safety liaison officer with the National Aeronautics and Space Administration. The winner will receive a \$1,000 scholarship and will be flown to the Kennedy Space Centre to watch his project launched.

Academics call for new Australian grants scheme

from Geoff Maslen

MELBOURNE A group of Australia's top educationists have called on the Commonwealth government to set up an Australian educational research grants scheme, similar to those operating at the national level for other areas of applied research.

In a submission to the federal minister for education and youth affairs, Senator Ryan, the group says such a scheme would not only meet a serious and widely recognized national need, but would have the capacity to provide help to improve the quality of Australian education and to deal with current and future educational problems.

French universities split over reforms

from David Dickson

PARIS A major struggle is taking place among university supporters of President Francois Mitterrand's Socialist government over whether substantial modifications should be made in its plan to reform French higher education.

A bill which describes the proposed changes, in particular the government's desire to broaden university entrance and to increase the professional orientation of university courses, was due to begin its second reading in the national assembly on December 8.

This was six months after it was first passed against a background of violent protests in Paris and three weeks after its major provisions had been rejected by the opposition-dominated senate. This rejection had been widely anticipated, given the criticism which the government's plan had generated not only in conservative political circles, but also among certain categories of university teachers, in particular lecturers in the fields of law and economics. They fear that the effect of broadening the entry to universities will be to reduce the quality of the education that they will be able to offer

and hence the status of their graduates.

More troubling for the government, however, has been growing opposition from a number of leading university teachers and research workers in other disciplines. Although they claim to be in general support of its left-wing policies, they nevertheless argue against some of its plans for reforms in the administrative structure of universities.

This is on the grounds that they would give too much power to non-teaching staff and place too much emphasis on the provision of practical courses, to the possible detriment of the broader cultural and scientific roles that higher education is expected to play.

Such fears were expressed in a letter sent directly to President Mitterrand by 45 senior university academics, including three Nobel prize winners and 27 members of the Academy of Sciences.

This letter endorsed some of the principles on which the government's proposed changes are based, such as the need to ensure that university places are available to all those able to benefit from them. But it warned that some of these specific recommendations could lead to "a profound and

irremediable degradation of the university".

Signatories to the letter included a wide range of prominent French intellectuals, such as the historians Georges Duby and Jacques Ellul, mathematicians Laurent Schwartz and Rene Thom, the anthropologist Claude Levi-Strauss, and the sociologist Alain Touraine.

Fearful that the government might be tempted to react favourably to some of these criticisms, perhaps even through the personal intervention of President Mitterrand himself, the supporters of the reform have organized a counter attack designed to persuade the national assembly to reject the amendments to the original Bill which were approved by the senate.

Last week, 1,500 individual members of one of the main university teaching unions, the Syndicat National de l'Enseignement Supérieur, signed a full-page advertisement in the Paris newspaper *Le Monde* also directed to President Mitterrand.

Further support for the government's reforms in their original version have come in a separate appeal from 40 of the 74 presidents of French universities, including Madame Monique Lafon-Auge, president of the Uni-

versity of Paris-XII and the senior vice-president of the conference of university presidents.

The president of the conference of university presidents argued that as currently organized the different types of education sector are too isolated from each other, and support the government's proposals for greater co-ordination.

M. Alain Savary, the minister of national education, has already made a concession to critics of his reforms by supporting an amendment to the original Bill increasing the proportion of senior faculty members on the university councils responsible for academic policy. He has also suggested that minority disciplines should be ensured a seat on university administrative councils but has refused to argue that there should be greater selection of university entrance.

So far, M. Savary has managed to persuade Socialist deputies in the national assembly that the government does not intend to make any further modifications to its proposals, despite the intensity of the criticism that it is currently facing. If necessary it will use its full statutory powers to ensure that the law comes into effect.

'Global plan needed'

from Mark Gerson

MONTREAL A global development plan is needed to heal the ravages wrought by the technological revolution, Jean-Jacques Servan-Schreiber told 750 representatives in education, labour, business and government in Ottawa last month.

Servan-Schreiber, who is president of the World Centre for Information and Human Resources, was addressing the Canada Tomorrow conference, organized by the federal government to examine the implications on Canada of the new technology. "The new plan will not be a financial plan, but a plan with a transfer of knowledge, of learning, of training and of the ability to create," said Servan-Schreiber.

Cooperation in the areas of agriculture, education and health alone could mean that "no part of the world would lack food, education or the means to deal with health problems," he said. He called on universities, laboratories and research centres around the world to work together toward the same kind of global rebirth the Marshall plan kindled 40 years ago.

"Today our task is 100 times greater than that of the Marshall plan," said Servan-Schreiber, "since we are no longer dealing only with industrialized countries, but with the whole world."

After the last war the United States initiated the rebuilding of Europe and Japan through the Marshall plan. But today, the US is as badly hurt by the rest of the world as ever, he said. The "shark of the computer revolution" has rendered plant and factories obsolete in the space of a few months, he said. "It has forced tens of millions of men and women out of the labour force, turning them into the unemployed beggars of society."

In the "so called rich countries" of the Organization for Economic Co-operation and Development, there are now 38 million unemployed, with a further five billion expected by 1985. The impact on the third world, he said, has been even more disastrous, he said.

"We are all at the same level, and thus the importance of this crusade for knowledge and scientific learning for all men, regardless of continent or culture. The same priorities apply to north and south, to east and west."

The new Greek

Professor John Algeo, professor of English at the University of Georgia at Athens, has surveyed the spread of 1,500 students to find out what kind of language is spoken on the Athens campus - and discovers that it may be Greek, of a kind. Examples include: "the article", "blunge" or "mug" (the article), "blunge" or "mug" (the article), "steroid" (a college athlete often professional in all but name).

Getting its sums wrong

The Youth Training Scheme has been unable to fill thousands of its places. Patricia Santinelli asks why and how it managed to get its figures wrong

One of the most disturbing questions about the Youth Training Scheme, particularly in the last month, has been the mystery of thousands of young people who have apparently disappeared. This has resulted in a shortfall of filled places and bitter changes as to where the blame lay for the heavy financial losses incurred.

At first the culprit was deemed to be an increase in those entering further education. But Department of Education and Science figures were soon shown that this was not the case.

Part of the mystery has since been explained by a welcome rise in youth employment. Department of Employment figures issued last week show that 16 per cent more young people than expected obtained jobs between May and October. In areas like Hertfordshire this was as high as 30 per cent.

There are also indications that the Youth Training Scheme is competing with the YTS. This is certainly the case in Birmingham and Bedfordshire but with running Manpower Services Commission both in south and north-east England there certainly seem to be colleges engaged in both types of work.

Similarly, in 11 areas - Bedfordshire, Buckinghamshire, Birmingham, Cleveland, Devon, Gloucestershire, Hertfordshire, Inner London, Liverpool, Leicestershire and Surrey, the YTS found that provision for both did exist in colleges. But the proportions varied enormously from one area to another and within each locality.

In Birmingham, the local area manpower board decided on a high proportion of Mode A training - little of which is in colleges - and on which there is a substantial shortfall, whilst the authority's Mode B provision has been confined to adult training centres rather than to the colleges.

Devon, like Birmingham, is suffering from a substantial shortfall on Mode A training but this seems to have mainly affected its colleges. However Birmingham is doing well running Mode B courses. Cleveland's colleges of Mode B work and have only just started recruiting their Mode A trainees. The inner London colleges have about 49 per cent of all off-the-job training and claim that MSC officers are stalling the approval of more Mode B schemes.

Liverpool was given an equal proportion of training on all modes, and colleges are roughly covering 50 per cent Mode A and 50 per cent Mode B. Gloucestershire is also doing an equal proportion of Mode A and B work but says that although the number on off-the-job training in colleges is adequate it is not as high as expected.

The Further Education Unit, one of the bodies involved in a YTS survey, says a consistent pattern is lacking because schemes have been negotiated locally and this has resulted in various interpretations of the rules. Certain colleges have been given the work in one locality and not in another, with no apparent reason.

This is a view shared by the APC which says that some colleges are doing better than others. But there is no explanation as to why there were such differences in colleges only a few miles apart.

For example, it points out that in the south-east of England the balance of provision is still altering because colleges are getting more requests for off-the-job training. This is creating problems in getting trainees on to supplementary benefits.

There are three types of schemes. Mode A schemes are described as largely employer based. Places on these schemes are provided by public and private employers, local authorities, voluntary agencies and in some cases colleges acting as managing agents rather than off-the-job trainers.

There are two grades of Mode B scheme and they are organized by the MSC using its own facilities or involving sponsors. These are designed to provide high quality training. The MSC either manages or sub-contracts the year-long programme.

Perhaps what the MSC ought to be doing is questioning why its information is incorrect. There are currently some six projects investigating different aspects of the YTS, some of which are actually funded by the commission.

Yet none of these are coordinated, except on an ad hoc basis by the different groups carrying them out. Most of their reports will not be available until well after the MSC and ministers have taken a decision in January on next year's scheme.

Current knowledge of the national scene is extremely patchy and confused - as shown by two contrasting conclusions on where colleges stand. For example Mr Clive Seale, a solo researcher based at Garnett College, has figures based on a 61 per cent return or 282 further education colleges. Mode A represents 75 per cent of college work, Mode B 14 per cent and Mode B1 10 per cent.

The APC's overall impression is that most colleges appear to be concerned with running Mode B courses. But many areas and the substantial rise of private trainers in certain places.

The case of Devon, and in particular Exeter College which stands to go bankrupt, has highlighted the results of the shortfall which led to fewer youngsters being sent to colleges for off-the-job training.

In fact this has not happened because there has been an increase in numbers going into further education concurrent with the shortfall and it has been impossible to redeploy resources. Exeter College in particular has been caught in this because it has to meet a demand for £90,000 - half of the total sum being demanded by the county from its colleges to meet a deficit on the YTS. This came on top of a £172,000 already forced on to the college this year.

The authority has refused to pay the deficit itself because of the likelihood of incurring Government penalties for overspending. A special education committee meeting took place early this week to decide what can be done about next year's scheme. The county estimates that it would have to subsidize Mode A training to the tune of £400,000.

Devon says that when its colleges are sub-contracted as managing agents on Mode A they can cover the costs but cannot do so when they are operating as providers of off-the-job training. The county intends to continue with Mode B provision on which it has sufficient numbers, even though it has to subsidize the scheme to a small extent.

In addition there is evidence from both the south-east and north-east of England that colleges are being used by employers and managing agents to supply the more expensive provision of supplementary benefits.

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Under Mode B1, schemes are run through training workshops, community projects. Under Mode B2 schemes are organized by colleges, training associations, employers and others.

colleges courses which have already started. As a result, colleges might be forced to turn down managing agents and advise them that there are no appropriate courses.

It would seem that the MSC owes providers and others some clarification of the national picture, especially as this is already being complicated by a sudden rise in recruitment and is about to be further confused by Christmas school-leavers.

For example, it is necessary to take a clear look at the shortfall, the resulting financial difficulties and the extra demands for finance. These have been generated by fewer young people on Mode A, of which Devon is the cause célèbre, and Mode B2 which several counties are having to subsidize regardless of any shortfall, by several counties.

In addition there are freshly-brewed issues like compulsion to join the scheme through cuts in benefits, the limited length of the 13-week off-the-job training period which worries many areas and the substantial rise of private trainers in certain places.

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On the ball: A girl and four boys are at Luton Town Football Club under the Youth Training Scheme.

For example they provide computing and catering courses rather than the less expensive life and social skills and clerical courses.

On Mode B, which is widely regarded as the better quality provision, there appear to be three problems. One is that the payment negotiated for training is regarded as too low and problems arise in having to subsidize such provision.

The ACC has for some time been trying to persuade the MSC to up the payment for Mode B training from between £2,010 and £2,300 to nearer £2,700, but without success. The Inner London Education Authority is currently subsidizing its Mode B provision in three colleges to the tune of £90,000 - its provision on Mode B was originally agreed to be paid at a higher rate. Both Cleveland and Liverpool authorities are spending some £1m and £500,000 extra respectively to provide adequate courses under Mode B.

Another problem is the shortfall of Mode B2 places nationally. Only some 20,000 have been filled as opposed to the target of 55,000 and an approved number of 36,000. The APC says that south-east England colleges could be in serious difficulties because of the shortfall on Mode B2. This is because they took on additional staff who either have to be redeployed or worse might have to be sacked.

Milton Keynes College in Buckinghamshire has been saved from making such a decision, in spite of having only met 50 per cent of Mode B2 target, as it has gained a much higher proportion of off-the-job Mode A training than anticipated.

A third aspect of Mode B provision is the threat by the MSC to cut down Mode B2 courses to only 20,000 from 1984/85. This has already been opposed by the YTB which referred the matter to the regions. But it seems from recent statements by Mr David Young, chairman of the MSC, that the commission intends to go ahead regardless with the cuts and a major increase in Mode A.

The proposed cut has created great concern because Mode B provision is regarded as being of better quality generally and as serving special needs. For example, Cleveland, Liverpool and the IEA among others, all say they need these type of courses which have a much higher quality and can meet the very different and special requirements of their areas.

On the question of the 13-week off-the-job training it seems clear that several areas have decided it is totally inadequate. Bedfordshire says that on the whole it is not sufficient but in some cases that depends on integration and accurate matching of young people to courses.

The IEA wants to see an increase as soon as possible. Both Cleveland and Liverpool have raised it to 18 weeks and to between 18 to 24 weeks, respectively.

Compulsion is a fairly recent issue which has been taken up by both the National Association of Teachers in Further and Higher Education and the ACC, which discussed the case of Nottinghamshire and Leicestershire at its recent education meeting. Other areas which have been affected are

Birmingham, South Tyneside and there are reports that both Telford and Dudley have the same problems.

Under present regulations young people who refuse a place on the YTS for a reason deemed "not sufficient" stand to lose their unemployment benefit for six weeks and 30 per cent of their supplementary benefits. This is the same as for adults who refuse a job.

A Department of Employment circular on the Youth Training Scheme is currently going the rounds asking that careers officers, job centres and employment offices report cases of YTS refusals.

The ACC says that pressure has already been put on careers officers in certain areas to disclose cases. This is putting the officers in an untenable position as well as endangering the future credibility of the YTS, it claims.

The rise of private trainers has become an issue in Birmingham and to a certain extent in the IEA. This is because of the possible ephemeral nature of the companies and the doubtful quality of their offerings. In Birmingham it appears that private trainers have cornered some 5,315 of the 9,442 places allocated to Mode A training. This is about 56 per cent of all Mode A training and some 42.5 per cent of the total 12,540 places approved by the area manpower board.

In contrast employers have only been given 16 per cent of all Mode A training and 11 per cent of the total. Only 8,500 places covering all modes have been filled and there is a shortfall of some 3,000 places in the area. The Natfhe in Birmingham is currently investigating the extent and role of private trainers on the YTS in the area, with the help of the Trades Union Resources Centre. It is particularly concerned about the quality of what is being offered by agencies which have not been in business very long.

Mr Paul Mackney, a Natfhe official in Birmingham said: "As a result of the shortfall, I expect some of these agencies to go bust, indeed some were in a poor state before they started. And what worries us is what is going to happen to the trainees and how they are going to be transferred on to other schemes."

The IEA claims that its colleges have only achieved a 49 per cent coverage of the off-the-job training because they are in competition with Pitmans and Slight and Sound.

A report by the Greater London Training Board published in the autumn also shows concern about the extent of privatization and adds another name to the list, Control Data Institute. It points out that private training agencies are also moving into sections where statutory industrial training boards have been abolished by the Government.

The report adds that the experience of Central and Fife, an area manpower board in Scotland, which was overruled by the MSC in Sheffield, suggests that the boards will be unable to prevent the growth of these bodies. This will happen even where local further education colleges have the experience and resources to offer training in the same skills.

Conventional wisdom gets painful tap

In only nine months in office as Australian minister for education and youth affairs, Senator Susan Ryan has already given the bureaucrats of the education system a good shake and loosened more than a few conventional wisdom teeth on campuses across the nation.

In trips that have taken her to talk to college and university groups in every state, Susan Ryan has repeatedly called on Australian higher education institutions to become less insular, more responsive to community needs and more active in social reform.

"It is a great paradox to me that our universities, which we might suppose, draw on the best knowledge about the world we live in and give instruction in the best means of increasing that knowledge, are not moved to initiate corporate social action of any kind whatever by this knowledge," she says.

"I do not propose that universities should be solely concerned with social reform, or that they are the only institutions in our society which should exercise that kind of responsibility. I would be greatly reassured, however, about the willingness of the tertiary institutions to play a constructive role if they were to make a start on the business of ensuring social justice and equity within their own walls."

This is a theme Senator Ryan has returned to time and again. Universities and colleges - with some honourable exceptions - cannot be proud of their record in making their courses available to women, to the children of poorer families, members of some ethnic minorities, rural dwellers or Aborigines.

She has warned: "It is time for the universities to re-examine the roles they play in relation to society as a whole. If they undertake this examination with the vigour and enthusiasm that the government thinks appropriate, they can count on the government's full support. Without becoming more socially responsive, universities will find it difficult to regain the support and respect of the community at large, and if universities lose community support, the government loses impetus for expanding its financial support."

Higher education, however, is not likely to be as quickly reinvigorated this time round as it was under Kim Beazley - Susan Ryan's predecessor in the portfolio when the Labor Party last came to power a decade ago. But that is principally because the economic climate is wintry today, compared with the balmy spring of 1973.

Principally, but not wholly, "We want to see signs of universities as capable of responding and upgrading their efforts by doing hard, internal things, taking hard, internal decisions, before we would be prepared to allocate them extra funds," Susan Ryan says, adopting an attitude oddly reminiscent of the former Liberal minister for education, Senator Peter Baume.

She asserts too, that many academics are frustrated by the man-

WORLDWIDE

Geoff Maslen assesses the effects of Australia's new policies

agement policies of university administrations - not just the younger or female academics but many others who believe that the institutions have become bureaucratic and unimaginative.

"The general impression I have got going around campuses is of a staleness - and a view that they cannot do anything unless they're given a lot of money first. We don't accept that." The new minister, in other words, has not lost any time in making clear what Labor's priorities are and how higher education will be expected to respond to them.

Almost as soon as she moved into the education minister's small, modest suite of offices in Parliament House, Senator Ryan began putting her party's election platform into effect.

The Fraser government's controversial student loans scheme was just about to start distributing money in March when it was scrapped. Proposed amalgamations of tertiary campuses at Newcastle and Armidale in New South Wales - again set in train by the former Conservative administration - were called off.

The department of education, however, itself underwent a merger with the office of youth affairs (formerly within the employment ministry). Administrative reforms of both were set in train to give them a policy development role. Departmental heads were shifted about, new blood brought in and a woman - Ms Helen Williams - became deputy secretary of education and the most senior female in the commonwealth bureaucracy.

In July, Senator Ryan was able to announce that more money would flow to education in 1984, including \$70m to be spent on encouraging greater participation by young Australians in education. Higher education would receive a small increase in its allocation, notably an extra \$10m to allow universities and colleges to enrol an additional 3,000 students next year.

More importantly for institutions, Senator Ryan promised to restore retrospective supplementation of grants, whereby the government guarantees to make up the cost of any increases in salaries or wages during a year. This had been abolished causing great concern among administrators.

Technical and further education re-



ceived the biggest boost - a 5 per cent increase in grants - and a ringing endorsement by the new minister's record in providing programmes that are accessible to the more disadvantaged groups in Australia.

Women make up the largest of these groups, of course, and it is in her efforts to achieve some sort of equality for women in Australia that Senator Ryan's influence is likely to be most immediately felt. As minister assisting the prime minister on the status of women, Senator Ryan introduced a Bill into Parliament in June which would outlaw sexual discrimination on the basis of marital status or pregnancy.

The Bill has met with a remarkably stormy reception - in part because of inadequate drafting, but also because of the threat it seems to pose to many people's cosy perceptions about the roles of males and females in this country.

According to Senator Ryan, the effect of the legislation on tertiary institutions will be to assist in remedying longstanding inequalities between male and female staff members and, indirectly, between male and female students. Although females make up nearly half the student enrolment in colleges and universities, only 17 per cent of full-time academics are women and they are mostly concentrated at the lowest levels in the hierarchy.

The structural discrimination against women employees will not be significantly addressed by the Sex Discrimination Act, Senator Ryan says. So she plans to introduce affirmative action legislation next year that will require institutions to develop internal management plans to show how they

intend to overcome structural inequalities.

The furor generated among Conservatives by the Sex Discrimination Bill is likely to seem mild when they start reacting to the idea of affirmative action. Not that this will deter Susan Ryan. She is, above all, a staunch feminist and - as the first woman to occupy a government front bench in an Australian Labor administration - probably the most powerful in the country.

One could hardly have predicted this, given her origins. She was born into a strongly Roman Catholic family at Camperdown, on the poorer outskirts of Sydney, 41 years ago and was schooled at the Bridgeline Convent in Maroubra. She went on to do an arts degree at Sydney University, married an Australian diplomat at 20, was briefly a teacher, then a full-time wife and mother of two children.

She came upon the feminist movement in New York in 1970 and decided she had long been a closet member of the sisterhood. When her marriage broke up, she returned with her children to Australia and finished an MA in English literature at the Australian National University. She joined the Labor Party as soon as she got home and was a founder of the Women's Electoral Lobby in Canberra.

Her feminist supporters helped build her path to preselection and Parliament - first as a member of the local House of Assembly in the Australian Capital Territory, then in 1975 as one of two new senators for the ACT.

Two years later she was on the Opposition front bench and was variously Labor's spokesperson on the media, arts, Aboriginal and women's

affairs. She was outspoken in each of these areas and was often in the eye of the storm. Her full media profile light fell on her this year with her elevation to the ministry and the Hawke government's inner cabinet.

Today, she appears to be relishing her job. She is a small, vivacious woman who greets her visitors with a back handshake and a warm smile. She is efficient and business-like in her dealings with the press and comes across as intelligent and articulate with a turn of phrase smoothed by constant repetition. According to some members of her department, however, she is a bit of a control freak.

She herself says that since taking office the amount of mail flooding in has more than doubled. But there are no problems coping - just getting the department reorganised and improving the lines of communication.

Despite being the lone female among Labor's cabinet heavies, she seems to have earned the respect of her colleagues. "My colleagues accept that I'm going to do things like attacking sex discrimination and appointing women to statutory authorities," she says. "They're resigned to it."

Resigned? "Well, some are even enthusiastic about it. The prime minister is one of those and the more I work with Bob Hawke the more I'm impressed with his capabilities."

Outside the cabinet, Susan Ryan has scored points for her efforts to reduce the inequalities in Australian education, especially those affecting Aborigines. Even her critics give her marks for application, although that is all she will acknowledge.

The vice chancellor of Sydney University, Professor John Ward, in fact, observed after Labor's first day in office that little was being done to help the teaching and research standards of higher education.

"Virtually nothing is being done to improve the prospects that Australia will eventually have one of the world's great universities," Professor Ward said. "The government, as it is fully entitled to do, has made a clear choice. Resources are scarce at present."

Similarly, a group representing national academic, student and teacher associations and calling itself the Higher Education Round Table, has criticized the small increases in grants to universities and colleges set out.

Likewise, the government's failure to keep its promise to bring the level of the Tertiary Education Allowance to that of the single adult dose payment has come under attack.

"We're not sliding from our commitment to raise TEAs," Susan Ryan says. "But we decided that the unemployed had to have priority for a large increase."

Moreover, she says, if the government's strategy for increasing young people's participation in education succeeds, there is the strong prospect that considerably more money will flow to higher education in the next triennium, starting in 1985.

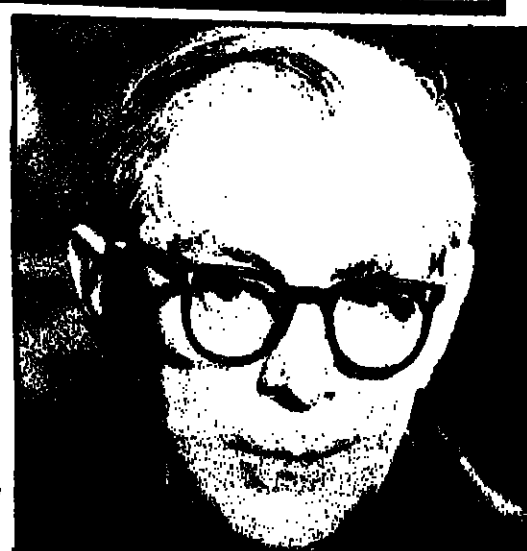
The problems confronting tertiary institutions around Australia - many of them the result of years of belt-tightening under the liberal - are not going to be solved overnight. But there is considerably more optimism on campuses than there has been for a long time.



Christian and sceptic

Edward Norman reflects on how the thinking of Sir Herbert Butterfield helped shape his life

Butterfield: extraordinary loyalty to Methodism



Herbert Butterfield was the last distinguished historian to become Master of Peterhouse. That was in 1955, and he held the post until his retirement in 1968. The Cambridge College over which he presided was noted for its historical scholarship: Sir Michael Postan, Sir Denis Brogan, Dom David Knowles, and Dr Denis Mack Smith were all fellows. But even of those, it is Butterfield who most seems to be remembered by his pupils as a great teacher, as a man who inspired something in them beyond academic expertise or simple regard for a courteous and kindly disposition. Yet it is curious that this should have been the case, for Butterfield had a profoundly sceptical and subtle mind, and never fitted any of the categories into which his disciples tried to place him.

The layers of his scepticism could in part be penetrated - but not to reveal any hard bedrock upon which they rested. There was, in Butterfield, no systemic thought, no general world-picture or set of lucid references to which the inquirer (or Butterfield himself) could resort. The words at the end of *Christianity and History*, the lectures which he gave in 1948, are to be taken quite literally: "Held to be true, and for the rest, by totally uncommitted." Butterfield did actually believe in history as a subject, however; it is not just one among a number of useful disciplines, but a civilizing way of informing mankind about his limitations - it is the means of revealing the need for scepticism. The mere pursuit of the subject, furthermore, disclosed human fallibility. It was, he wrote, easier for a camel to go through the eye of a needle "than for the most excellent trained historian to repeat a piece of gossip or an anecdote at the dinner table without adding a little verisimilitude."

What chance, then, for relying on the evidence of the past? Some "future student of the 1930s and 1940s," he wrote (in 1948) may even be misled by the false "narratives of pretended eye-witnesses," and by "faked diaries."

From the accumulating distance of time it is now possible to see - and as Dr C. J. McIntire, who has studied his thoughts, has pointed out - that it was religion which was at the centre of Butterfield's historical writing. Even as McIntire has observed, "when writing on the problems of historiography, his work melts into religious thinking." *Christianity and History* was certainly his most famous and widely-read book, but the vision of the relationship between human personality and historical processes, which is spelled out in one set of contexts, is also at the heart of his *Whig Interpretation* (1931) and his *Lectures* (published in 1955) *Men on His Past*. It is, too, a vision of scepticism, and it is the last thing which his readers and so many of his pupils seem to have grasped. Butterfield was brought up as a Methodist - not a particularly narrow one, but a Methodist of the tenacious Yorkshire Methodism of his childhood. When he went up to Peterhouse in 1919 he was already a Methodist lay preacher, having begun his work while still a boy at King's Grammar School. He continued to preach until 1936, and his mind, thereafter, remained formally on the list of official preachers. His Methodism was important to Butterfield, and although he later attended the Anglican services of his college chapel, it was in the Wesley Chapel, in

King Street, that his Cambridge devotional life was centred. Worshipers at the place, indeed, were said to be unaware that the quiet man who joined them each Sunday over so many years had any public role at all - least of all did they suspect him of being the Head of a House. This loyalty to Methodism was extraordinary: Butterfield's scepticism of mind, it might be supposed, and his intellectualism, were better suited to the Church of England, where scepticism about even the most fundamental religious propositions is commonplace. The reason for his continued adhesion to Methodism lay in his anti-Calvinism; he distrusted hierarchy, disliked religious formalism, and observed, through history, the clergy making claims to insights and authority which were quite unwarranted. But he gave up Methodist preaching: it is significant.



Edward Norman

Now despite the worldwide success of *Christianity and History* Butterfield's ideas had no influence upon the Christian churches. The inherent scepticism of the lectures, and, above all, their distrust of human idealism, was completely at variance with the discernible trends in educated Christian thinking in the middle years of the present century. It is not clear what the Christian leaders who apparently endorsed the lectures thought they were about; perhaps they were so relieved at chancing upon a prominent and respected layman who bothered with Christianity at all that they elected to look no further. In fact Butterfield had an unshakable personal faith in Christ and a total disbelief in the human institutions which sought to explain praise to the men of the past accordingly or not as they had hindered or encouraged progressive liberty. To the relativism of Butterfield's mind, such a thought of Lord Acton by Harold Temperley, his teacher at Peterhouse, Butterfield found it to be deeply alien, and devoted a chapter of the *Whig Interpretation* to an attack upon it. Acton believed the historian had a prophetic function, to apportion blame or praise to the men of the past accordingly or not as they had hindered or encouraged progressive liberty. To the relativism of Butterfield's mind, such a thought of Lord Acton by Harold Temperley, his teacher at Peterhouse, Butterfield found it to be deeply alien, and devoted a chapter of the *Whig Interpretation* to an attack upon it.

But what did his pupils make of it all? Butterfield was known as a "Christian thinker," yet there was no clear Christian exegesis in his writing of history - indeed, there was an expository, intellectual, like to know things intellectually. Butterfield had no doubt about the truth of Christianity for two reasons. In the first place his traditional view of man corresponded with historical reality, as he saw man in the past; full of frailty. In the second, his belief in the priority of personality reached its apex in the God who became man, thereby personalizing the creative impulses of the universe and confirming the intimations which man had before perceived more crudely. But the nature of the creation was changed, and in the writing of history the same nuts and bolts were still visible. There is no "religion" in Butterfield's historical writing because it is absent, as men would see it, in life itself. Most of Butterfield's pupils, however, cannot have appreciated the springs of his scepticism and cannot have known in what sense he was a "Christian thinker." What they recognized was an obvious distinction of mind, a new before perceived more crudely, from a person of great kindness. His influence resides in that, for he did not establish a school of thought or a historical method. Butterfield would have been glad to think it so. Treasure in earthen vessels was exactly what his understanding of human life was all about.

It is here, in the analysis of human personality, that Butterfield was most sceptical - and most Christian. This was not a paradox: it is only to the praise of humanism of contemporary Christianity, with its partial world, that

a Christianity centred upon scepticism about human motivation will seem shocking. Butterfield saw that Christianity was an historical religion, and that historical events "come out of personalities and run into personalities." He was not concerned with the rationalized accounts men give of their ideals, but with the common depravity of the human personality which makes all human attempts at improvement ambiguous of inspiration and flawed in performance. He observed in history, that is to say, the evidence of the Christian doctrine of Original Sin. The historian, he wrote, should have "a lower view of human nature than the one commonly current in the twentieth century." The unthinking - which is most educated people - will accuse a man of true insight, he notices of "cynicism." But it is not so; the man of real insight is the one whose scepticism about man himself has a religious origin - the man who sees that the "seamy side of human nature" is not some accident of background or environment, or the fault of certain sorts of people, but is the fruit of a fallen creation. The "infirmities of human nature are always with us," Butterfield declared, and the modern world is not suffering, not from lack of ideals, but through "the superficiality of its idealists" because they do not understand man himself. A true study of the past, one which is concerned not with ideals or ideologies, but with people, is a corrective to vision - though it will not help to put the world to rights, for the world is enveloped in a steady-state of evil and virtue conjoint. "What history does is rather to uncover man's universal sin," and in another place, "It is essential not to have faith in human nature," for "such faith is a recent heresy and a very disastrous one." No wonder Butterfield's thought has found no resonances in the modern Church.

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That is a matter of concern in the polytechnic because most of them have taken a very different path from the generalist route. They were established to be a socially responsive element in higher education and the vocational success of their students is therefore a central feature of this philosophy.

It is particularly a matter of some concern when reports are published which indicate that the prospects are bad for poly graduates. *The Times* had a report at the top of the page in November of this year with the headline "Employers Banned against College and Polytechnic Graduates." It was based upon a study which has not been published, which makes it difficult for anyone who cares to check the facts. A crucial finding was that employers were unconcerned about degree content. What they cared about was the institution from which the graduates came. One recruiting officer was reported as saying that "some of the polys produce rubbish."

Apart from the issue of what that says about the recruiting officer, the odd thing is that the findings of the study conflict with our experience and that of many careers officers I know. Ted Mears of Sheffield Polytechnic, who appeared on that programme, assures me that it does not match his experience either. For us the more vocationally slanted courses do much better than any generalist ones. And our unemployment rate for the last few years has been half the national average. I notice that *Graduate Post* makes the same criticism of the report: its own contact with em-

Patrick Nuttgens



Reading between the figures on poly unemployment

A few weeks ago I took part in a BBC2 *Leisure* programme under the title "The Race for Place." Around three short films (showing pupils taking their A levels, the recent history of educational administration and graduates trying to find jobs at the end) a discussion took place between a vice chancellor, John Ashworth of Salford, Sir Keith Joseph and myself as a polytechnic director, all under the care and control of Ludovic Kennedy. I always come away from such exercises convinced that it was dreadful but in fact, surprisingly, number of people watched it and the comments coming back to me have been lively and on the whole favourable. We must have done a good job. One of my correspondents writes that Ashworth must be a superb polytechnic director.

I wondered which was worse - failing to get into a university (a disaster which thousands of unfortunate schoolchildren have been threatened with by their teachers) or failing to get a job at the end (probably less of a disaster in the long run because things may always change and at least the student years were with any luck a memorable experience). But the spectre of graduate unemployment is the more urgent threat and various events have made me think about it recently.

The fact is that any responsible teacher or manager of higher education must be concerned about graduate unemployment. Whatever some academics may say about the dispassionate love of learning for its own sake, the majority of students are very interested in having a job at the end. It is often nowadays suggested that they might do better with a general rather than a vocational education on the assumption that if they are not trained to do anything in particular they will be able to change from one kind of incompetence to another without difficulty.

That is a matter of concern in the polytechnic because most of them have taken a very different path from the generalist route. They were established to be a socially responsive element in higher education and the vocational success of their students is therefore a central feature of this philosophy.

It is particularly a matter of some concern when reports are published which indicate that the prospects are bad for poly graduates. *The Times* had a report at the top of the page in November of this year with the headline "Employers Banned against College and Polytechnic Graduates." It was based upon a study which has not been published, which makes it difficult for anyone who cares to check the facts. A crucial finding was that employers were unconcerned about degree content. What they cared about was the institution from which the graduates came. One recruiting officer was reported as saying that "some of the polys produce rubbish."

Apart from the issue of what that says about the recruiting officer, the odd thing is that the findings of the study conflict with our experience and that of many careers officers I know. Ted Mears of Sheffield Polytechnic, who appeared on that programme, assures me that it does not match his experience either. For us the more vocationally slanted courses do much better than any generalist ones. And our unemployment rate for the last few years has been half the national average. I notice that *Graduate Post* makes the same criticism of the report: its own contact with em-

ployers discovered a different view of recruitment from that of the *Times*. But it is not the first time recently that such findings have been published. I don't think I am paranoid - even though paranoia is said to be the occupational disease of the academic world - but I do wonder if someone is getting it us.

A report from the Unit for Manpower Studies in January 1981 entitled *Higher Education and the Employment of Graduates* stated that "polytechnic graduates from all groups except engineering are more likely to be unemployed than are university graduates and the position for polytechnic arts graduates is particularly bad".

The report was sufficiently alarming for me to ask our own careers officer to make a close study of the survey. The figures on which the conclusions were based were those produced annually by polytechnic and university careers services. Being long established and usually better endowed with resources, university careers services are at a clear advantage in the efficiency of their statistical gathering. It might even be that the comparative figures are measuring the size of careers services as much as levels of unemployment.

But even that didn't explain some of the more suspect conclusions and statistical methods. For example, liberal arts courses in polytechnics were particularly heavily criticized. The UMS report compared the destination in 1979 of university graduates in arts subjects numbering nearly 13,000 with polytechnic arts graduates numbering at the most 1,100. For earlier years the figure dropped as low as 300.

In one table, one student unemployed after a polytechnic arts stand-out course was shown to represent a 16.7 per cent unemployment rate! It seems to be a general error to compare dramatically unlike quantities. In one survey it was surely irresponsible to compare 61 history graduates from polytechnics with 2,182 who left university and express the figures as a percentage. A 14 per cent unemployment rate for polytechnic historians meant in fact that only eight students were affected. Similarly 2,493 unemployed English graduates were compared with 127 polytechnic English graduates.

A fundamental weakness in some of these comparisons is the habit of taking all the large university departments and then making comparisons with corresponding polytechnic courses. If the exercise were done the other way round, first taking a selection of major polytechnic courses, like accountancy, business studies and design and then comparing them with similar university courses (if there were any) it would show up some other differences between the institutions. And if the graduates from courses other than degree courses - the higher diplomas and professional courses which are degree equivalent - were considered, the results would be even more notable. The unemployment rates from some of our certificate and diploma courses in catering, accountancy, bilingual secretarial and social work is virtually nil every year.

We can't be alone in this. But if things got worse we might stick to our vocational philosophy and launch a new honours degree in Unemployment Studies.

E. Patrick McQuaid reports from America on the latest developments in public television education courses

Going back into Vietnam

The United States public television network is adopting an Open University approach and offering its series on Vietnam as a college course.

The Pittsburgh, Pennsylvania Council on Higher Education, a consortium of nine area colleges, chose Vietnam as its first in a series of telecourses. The programme is offered for academic credit in a variety of disciplines, among them sociology and political science, according to the council's director, Mr. Donn Neal.

The 13-part documentary *Vietnam: a television history*, premiered last April on channel 4 and scheduled for broadcast again this spring on BBC1 took six years to make. It was an international venture involving Britain's Central Television and France's Antenne-2.

The French planned a six-part series with the first three hours covering the French involvement. The Americans decided to devote two of the 13 hour-long episodes to events preceding the 1954 US intervention. In "Roots of a war" (which was slightly re-titled for British audiences) the French and British hostilities toward Ho Chi Minh's revolution are examined. Episode two, "The first Vietnam war," covers the decade campaigns from 1946 to 1954 and offers astounding footage of the decisive battle at Dien Bien Phu.

The American producer of these two episodes, Mr. Judith Vecchiarelli, says an accurate documentary on the French period in Vietnam could not have been possible without French cooperation. "Their researchy managed to

track down some footage never before seen publicly, such as scenes of Ho Chi Minh at the Fontainebleau Hotel in 1946. He was attending the last attempt at negotiations before the war broke out with France. The film belongs to the woman who was the little girl in that scene."

Across the United States, local public television affiliates, libraries, colleges and universities, state humanities councils, and veterans' organizations are running activities and "outreach" courses to coincide with each broadcast. In Rhode Island the local affiliate is working with a long programme to broadcast after the series which will focus on local concerns. Rhode Island has an estimated 20,000 Vietnamese veterans. In North Carolina, and in Minnesota, journalists, veterans groups, and counsellors are working on special programmes to examine the local impact of the war and to direct viewers and veterans to local resources for more information or emotional help.

A total of 59 scholars and journalists acted as consultants for the programme, according to Ms Sara Althoff, a member of the Boston staff. Roughly 3,000 pages of material in 15 volumes were churned out in transcripts from interviews conducted specially for the series.

Some 24 hours of stock footage, including

203,162 feet, were compiled from various archives worldwide and kept track of by a computer in Austin, Texas. Project staff conducted nearly 300 interviews in the States, Europe and Asia. In addition, 29 film editors and sound specialists contributed to the American version.

Chief correspondent for the series, Mr. Stanley Karnow, travelled and filmed interviews through out Vietnam beginning in 1981 with British producer Mr. Martin Smith, the French producer Elizabeth Davane, and the executive series producer, Mr. Ellison. "We wanted to let all sides to the conflict tell their story," says Mr. Ellison.

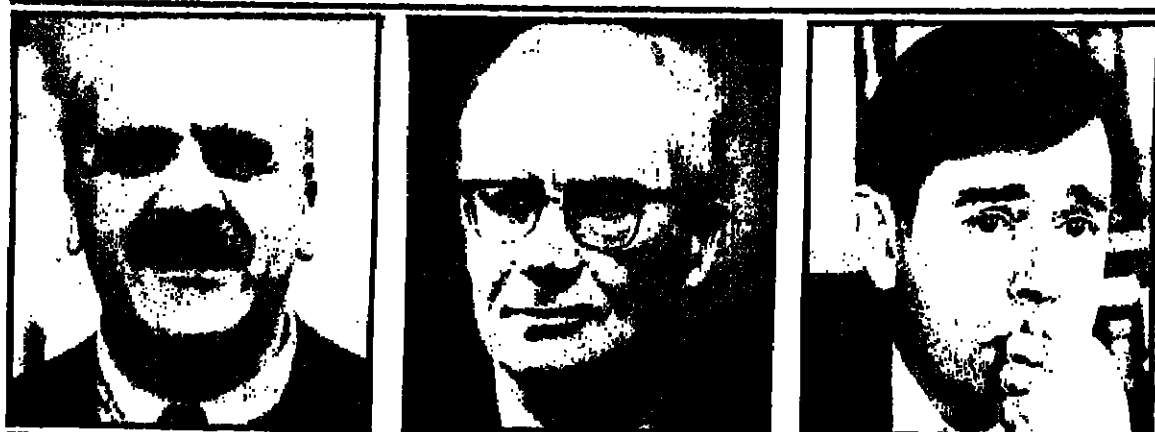
In an interview typical of the series, a North Vietnamese soldier describes his part in the final rolling into the former south capital: "None of us knew how to get to the independence palace. So many streets led to downtown Saigon; and myself had no idea where I was. So I turned to an old woman and asked, 'mother, where is Saigon?' and she replied, 'You're in Saigon.'"

In the spring of 1977 US General William Westmoreland approached executives at BBC's WGBH television station and suggested that a documentary about Vietnam from a military perspective was long overdue. Programme de-

passing all perspectives. By 1982 an odd assortment of allies had responded to appeals for contributions. Public broadcasting had put up \$50,000 for initial research and development, matched by \$50,000 from WGBH's discretionary funds. The ABC network also contributed \$50,000 and permitted full use of their archive and royalty free reproduction of tapes and films. Over \$1m came from the federal National Endowment for the Humanities and public television affiliates from across the country pooled \$800,000. Smaller grants and cost-cutting assistance from British and French producers brought in another \$300,000. Finally, the Chubb group of insurance companies became the project's sole corporate sponsor.

Several companion volumes have been written to coincide with the series: run *Vietnam*, from the Viking Press, is by Mr. Karnow, and publishes the telecast history. *A Viewer's Guide to Vietnam* is a 16-page tabloid distributed through local newspapers and available from local network affiliates. The Alfred Knopf Inc. publishes a 16-page tabloid distributed through local newspapers and available from local network affiliates. The Alfred Knopf Inc. publishes a 16-page tabloid distributed through local newspapers and available from local network affiliates.

Interest in the series is so widespread that WGBH found it necessary to publish a special newsletter, *The Vietnam Project News*, for special journalists, librarians and educators upon data on activities associated with the broadcast.



The policy makers: J. B. S. Haldane (left), Lord Trend and Sir Ronald Mason.

A war of independence

When the Advisory Board for the Research Councils met shortly to discuss Sir Ronald Mason's study of commissioned research, they will be debating issues of fundamental importance for the future of science policy in this country. It would be easy to be misled by the brevity of the Mason report into overlooking its significance. At stake is the future direction and control of policy for civil science research in Britain.

The origins of the present debate can be traced back to the early involvement of the Government in funding research before the First World War. When the first national health insurance scheme was introduced in 1911 part of the income from contributions was set aside for stimulating research on the advice of a newly created Medical Research Committee.

In the industrial arena, concern at falling behind the Americans and Germans led to the creation of a Committee for Scientific and Industrial Research in 1915. Both committees were attached not to functional departments of the Government but to the general purpose Privy Council.

From these early beginnings emerged the Department of Scientific and Industrial Research and the Medical Research Council. These bodies enjoyed a fair measure of autonomy. Their membership consisted of independent individuals, both scientists and laypeople, and they had full-time scientifically qualified secretaries.

Decisions on scientific matters were entirely free from outside interference. Especially important from the standpoint of autonomy from sectional government interests, they negotiated their financial requirements direct with the Treasury.

This position of scientific independence was confirmed and reinforced by the 1918 Haldane Committee on the machinery of government. Haldane recognized that central government should have a role in stimulating research in general as well as that required directly by government departments themselves.

The "Haldane principle" established that the control of such non-departmental research should be separated from the executive functions of the Government by placing it under a "minister who is in normal times free from any serious pressure of administrative duties". The Lord President of the Council, but ministerial responsibility did not extend to the exercise of judgment over the scientific value of the individual research projects.

Haldane did not envisage that his solution would provide a lasting framework, and he would probably have been surprised himself by its durability. His committee suggested that the time would come when the expansion of research activity would outgrow the Privy Council framework and that a separate Government department would "take its place among the most important departments of government".

Events were to prove Haldane a better judge of the future importance of research than the organization of the Government. It was only after 1945 that Government expenditure on research began to take off. In real terms civil research and development expenditure increased by tenfold between 1945 and 1962. At first the Government's response to this growth and to the scientific challenge of the Russian Sputnik was largely cosmetic.

In 1959 Lord Hailsham was appointed minister of science but the role was combined with that of Lord President of the Council. His duties included responsibility for the research councils, atomic energy, space re-

Clive Booth looks at the struggle for control of funds for civil science research

search and broad questions of scientific policy outside the sphere of defence. However, other ministers remained responsible for the scientific establishments within their own departments.

Excluded from the science minister's portfolio were the universities, although they accounted for (and still account for) much of the national effort in basic scientific research. The Chancellor of the Exchequer, advised by the University Grants Committee, was in effect the minister for the universities. It was the UGC's task to advise the Treasury on the financial requirements of the universities and to ensure that the universities met national needs.

But the appointment of a minister for science was a political act which did little to rationalize the organizational framework. When the Trend committee came to review the organization of civil science in 1962/63 they found: "... first, that the various agencies concerned with the promotion of civil science do not, in the aggregate, constitute a coherent and articulated pattern of organization; second, that the arrangements for coordinating the Government's scientific effort and for apportioning the available resources between the agencies on a rational basis are insufficiently clear and precise."

More specifically, Trend's criticisms were that the distinction between the roles of the universities (as the main centres of scientific research) and the research councils (as the promoters of research in fields of special interest to the Government) was being obscured; that the organizational structure had not adapted well to the emergence of new fields, such as nuclear physics and space research, which were dispersed among different bodies; and that there was a need for greater concentration of effort on industrial research than could be sustained by the DSIR with its twin responsibilities for industrial and general scientific research.

While Trend recommended that the dual support system for financing university research should be maintained, safeguards were proposed to ensure that the funding of any projects which had become an integral part of the universities' work should be transferred from the research councils to universities' general revenue expenditure.

However, the committee made no recommendations about ministerial responsibility for the universities because of the simultaneous existence of the Robbins Committee on higher education; but they did suggest that there would be advantages in placing universities under the minister for science.

The minister for science, Trend recommended, should have "additional substantive responsibilities for scientific manpower, allocating resources among the research councils, identifying national scientific needs, the exchange of scientific information, international scientific policy and the organization of administrative machinery for promoting scientific research and development. The staff would be strengthened to reflect the minister's more substantial responsibilities and would be involved in two-way interchange with senior scientific qual-

ified staff in the research councils.

If Trend's recommendations had been implemented, the Haldane vision of a Government department of first rank responsible for research would have come a step nearer.

However, this was not to be. When the Trend report was published in October 1963, Parliament had already entered its fifth year and expectation of a general election ruled out the possibility of substantial changes in the machinery of government.

It was not until 1965 that those parts of the Trend report which were accepted by the new Labour Government were enacted into law. The Science and Technology Act of 1965 created three new research councils, the Science Research Council (now SERC), the Natural Environment Research Council and the Social Science Research Council, alongside the Agricultural Research Council and the Medical Research Council.

All five research councils were brought under the Secretary of State for Education and Science whose own post had been created in 1964 by the merger of the Ministry of Education and the office of the minister for science. While the latter had nominal responsibilities for a broad area which included, for example, atomic energy and industrial research, the new secretary of state was placed in a more influential position over a much more limited area.

Research Councils no longer negotiated their financial requirements directly with the Treasury but had to work through DES officials and had to compete with other councils for a science budget controlled by the secretary of state. DES officials were in the potentially strong position of arbitrating between research councils and this provided some of the staple work of the DES science branch.

The forum for this arbitration was the Council for Scientific Policy, the membership of which was drawn from universities, industry and research establishments with assessors from the four natural science research councils. The secretary of the CSP was provided by the science branch.

Each year they prepared for the council a "forward look" offering projections of research council expenditure on various assumptions and discussing the consequences of growth or contraction both in the total science budget and in the expenditures of individual research councils. Recently, the forward look has been increasingly integrated with the Government's annual review of public expenditure.

One of the most significant decisions emerging from the forward look process was to initiate in the early 1970s a "big science" strategy, to focus resources (astronomy, space and nuclear physics) towards other areas of science. Although there have been only seemingly marginal shifts of resources among research councils there has been considerable redeployment within research council programmes.

The 1982 forward look (the first to be published) proposed significant reductions in the ARC and NERC programmes in order to permit growth in other council spending, especially the SERC. Allocating resources among research councils was however, smaller compared with the concept of a minister with real and overarching responsibilities for civil scientific research advanced by Trend. Yet the organization of responsibilities for the sciences in 1965 and the establishment of DES were regarded by a substantial activity which, according to the DES annual report of the period, reached a peak in 1967/68. From then on there has been a gradual loss of momentum and of science policy's moving away from the centre of the stage. Governments became preoccupied with the poor performance of British industry and attention in research policy concentrated increasingly on mechanisms for applying research results rather than the generation of new discoveries in pure science.

The position of the DES was further weakened by the 1971 Rothschild report. Rothschild argued that applied research should by definition have a customer, that much research council work, on the DES's own admission, was applied and that: "... this work had and has no customer to commission and approve it. This is wrong. However distinguished intelligent and practical scientists may be, they cannot be so well qualified to decide what the needs of the nation are, and their priorities, as those responsible for ensuring that those needs are met."

Rothschild made short shift of the Haldane principle: "The concept of scientific independence used in the Haldane report are not relevant to contemporary discussion of government research ... the [Haldane] report asserted that Government research should serve the community as a whole. But, in fact, the report mentions only such 'community-serving' research activities as follow directly from specific and formulated government policies ... If [Haldane] implies that the application of the results of research should be the responsibility of the independent scientific ministry, it should have been unacceptable in 1918 and must be now."

In spite of a rearguard action by Sir Fred Dainton and the Council for Scientific Policy which proposed a new executive board to oversee the research councils, the Government accepted the main recommendations of the Rothschild report. The scientific capability of some Government departments was strengthened by the appointment of chief scientists.

Departments gained members, instead of assessors, on the research councils in whose work they had an interest. Part of the science budget was transferred to executive departments to commission work from the ARC, MRC and the NERC.

Finally, the CSP was replaced by the Advisory Board for the Research Councils, on which the newly appointed departmental chief scientists would serve as full members. The ABCRC was given more restricted terms of reference than the CSP emphasizing liaison between research councils and the users of their research.

Further Government measures in 1974 and 1976 continued the erosion of the central position once occupied by the DES. In 1974, a non-DES minister, the Lord Privy Seal, was given responsibility for ensuring that adequate co-operation existed between government departments in the research and development field.

A committee of chief scientists and permanent secretaries under the chairmanship of the secretary of the Cabinet was created to perform a general coordinating function in science and technology. However, Government witnesses questioned by the Select Committee on Education in March 1981 indicated that the committee was hardly active. It remains to be seen whether Mason will assist the DES and research councils to recover the ground lost since 1971. The research councils will welcome the proposal to distance customer departments from detailed interference in commissioned research but they will be suspicious of the more influential role postulated for the ABCRC.

Research council institutes will be braced for a battle against closure or reorganization and transfer of some of their funds to the more flexible universities and polytechnics who are potential competitors with the institutes.

The chairman of the ABCRC, Sir David Phillips, already more closely involved in Whitehall than any of his predecessors, is unlikely to object to the strengthening of his role and confirmation of the rank of second permanent secretary (equal to the chairman of the UGC). Could he be the first chief scientific adviser to the DES?

Mason, like Trend 20 years ago, recommends that scientific administrators should be brought into this area of policy making. The British research council system is widely admired abroad and has played a leading part in maintaining the quality of British science. If Sir Keith Joseph is concerned to know how Britain, with its reduced means, can continue to produce pure and strategic research of world class, he should study the Mason report carefully.

Clive Booth is deputy director of Plymouth Polytechnic and was until 1981 an assistant secretary in the Department of Science and Technology.

along with other miscellaneous functions and it was only in June last year that one junior minister was given responsibility for the related areas of science and higher education.

In spite of being severely reduced in number, the staff of the science branch have continued to engage in important policy work on such subjects as post-graduate education, the financing of university science research and the publication of the 1982 forward look which was a signal achievement both for its contribution to public understanding and for the quality of its presentation.

Compared with the aspirations raised by the Trend report 20 years ago, the role of the DES is now quite narrow. It was defined by the 1979 *Review of the Framework for Government Research and Development* as covering "research which is not undertaken with direct application in mind but rather for the purpose of advancing knowledge".

Departmental ministers were seen by the review as setting priorities for research in their own areas: "... total Government expenditure on research and development is not determined centrally and distributed among possible beneficiaries: it is the aggregate of a number of separate departmental decisions ... In short, the Government does not have a single science policy: it has a whole range of policies."

Now the Mason report has called into question the wisdom of this aggregated approach to science policy: the commissioning arrangements devised by Rothschild "have not provided the dynamic for change that was intended; there is no evidence that they have added to or withdrawn from research councils' sensitivities (of proxy) customer requirements".

While the pattern of applied research has changed little, Mason observes that there has been a squeeze on the volume of pure and strategic research (that which is medium term and undertaken partly because of potential applications). He attributes this to several causes.

First, Rothschild's recommendation that a 10 per cent surcharge should be levied on customer departments' programmes to enable contractors to undertake general research was never implemented. Second, some departmental customers sharply reduced their budgets for commissioned research with serious effects on the NERC, whose funds for strategic research fell by half in the five years to 1982/83.

Third, the funds transferred originally from the science budget to customer departments were larger than justified by the distribution of research council work between the pure, strategic and applied areas. Last, in spite of—or because of—a substantially increased and costly bureaucracy the dialogue between customers and contractors necessary for the success of the system did not exist.

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I recently had the somewhat unenvying experience of being the object of a violent demonstration. A protester threw herself in front of my car as it left York Minster, and others tried to lie in the road. Had it not been for the skilful driving of my chauffeur, there could have been serious injuries. As it was, the demonstrators were swiftly dragged away by the police. One of them explained afterwards: "We just wanted to show our displeasure about Margaret Thatcher coming to York for the enthronement this month (a local company) ... is closing down as a direct result of her policies. But we were also protesting at cut-backs in the National Health Service, the problems of the jobless and cruise missiles coming to this country. No way was it an anti-religious demonstration against the Archbishop. There were a lot of Christians in the group."

Such all-purpose protest against the wrong person sheds a curious light on our times. It may seem a far cry from the solemn rejoicings surrounding the Quinqucentenary of Martin Luther. Yet Luther's "Here I stand, I can do no other", still represents the authentic voice of the protester, and it is not for nothing that the word "Protestant" was first used in a Lutheran context, even though Luther himself did not invent it. I hope, therefore, that some reflections on the relationship between Protestantism and protest may be an appropriate marginal comment on this year's celebrations.

The actual word "Protestant" was born at the Diet of Speyer in 1529 where the evangelicals, as they then called themselves, protested against unfair discrimination. The Diet had agreed that Catholic minorities should enjoy religious liberty in Lutheran regions, whereas Lutheran minorities should only enjoy such liberty in Catholic regions where there was a serious danger of civil disorder. The name stuck when the opposition asserted that "they must protest and testify publicly before God that they could do nothing contrary to his word". By linking protest with testimony they gave the word a positive connotation which many Protestants would still claim to be of its essence. By the mid-sixteenth century, however, the negative sense predominated, and it had become widely used as a neutral term applicable to all forms of anti-establishment.

It is perhaps this negative side of it which has made most churches reluctant to use it in their titles. Out of 318 member churches of the World Council of Churches only 16 explicitly call themselves Protestant, and most of those are in and around Indonesia. The Episcopal Church of America quietly dropped its Protestant prefix when nobody was looking. Within the Church of England the word never found its way into any of the official formularies, much to the annoyance of those who wish to emphasize the English Protestant heritage. The only liturgical context in which it appears is the Coronation service, where its anti-papal implications have an obvious secular, as well as a religious, resonance. Extreme Protestants protest with the Church of England attach high value to this isolated instance of its use, but for many Anglicans the word is an uncomfortable one which is avoided whenever possible.

Why this caution? It is more than a rejection of negativity. Other reformed churches may not use it in their titles, but they have no objection to it as a general designation. The notion of western Christianity as a dialectic between Catholics and Protestants may owe more to the convenience of statisticians than to peoples' own feelings about where they themselves stand, but at least the labels are not rejected. Church of England hesitations rest partly on the belief that the English Reformation took a unique turn. But I suspect that there is also an underlying sense that the word "Protestant" signifies something altogether too narrow. It is not just the feeling that the world who induce the feeling, Protestantism is an activity which belongs properly to minority, and a church which regards itself as secure and socially accepted is thereby likely to lose the cutting edge of its protestation.

A free church friend, when asked why he was still protesting about one or two points of continuing disagreement, but his second thoughts went back to the more positive notion of testimony, and he began to expatiate on the sovereignty of God and the constant need for radical criticism. In doing so he had shifted from the science of a particular Reformation to

Protest and Protestants

John Habgood reflects on the uses of a word which makes many Anglicans uncomfortable

The Archbishop waves to the crowd as he leaves York Minster after his enthronement



In modern times this shift of emphasis owes much to the work of Paul Tillich.

It was Tillich who drew a clear distinction between Protestantism as an historical phenomenon, one among a number of denominational forms of Christianity, and what he called "the Protestant principle", a principle of universal significance of which historical Protestantism is only one particular embodiment. This principle, for Tillich, was an essential thread running through all genuine forms of Christianity, whatever their label.

"The most important contribution of Protestantism to the world past, present and future, is the principle of prophetic protest against every power which claims divine character for itself—whether it be church or state, party or leader. Obviously, it is impossible to build a church on the basis of pure protest, and that attempt has been the mistake of Protestantism in every epoch. But the prophetic protest is necessary for every church and for every secular movement if it is to avoid disintegration. It has to be expressed in every situation as a contradiction to man's attempts to give absolute validity to his own thinking and acting ... (The Protestant Era, p. 231).

Churches which call themselves Protestant may lose hold of the protestant principle, as defined by Tillich, just as devastatingly as those which have never claimed to adhere to it. Creeping respectability takes hold of all. In fact, the idea that being a Protestant might have anything to do with modern forms of protest against a rag-bag of social ills would be a strange and offensive one to many of those to whom the word has come to signify solid, stable, undemonstrative virtue. Furthermore, protest within the churches, where it is found at all, is more likely nowadays to be directed towards objects outside the explicitly religious sphere, than against fellow Christians. The fact that the exact opposite of this is true in Ireland is a cause of offence and incomprehension.

Yet surely Tillich was right to see Protestantism and protest as part of an authentic religious stream which flowed from the Old Testament prophets, through the New Testament and surfaced in full flood at the Reformation. The stream has often flowed in trivial and unworthy channels. Squabbles about churchmanship, fixation on externals, the use of shibboleths to identify genuine Catholicism or genuine Protestantism, have all tended to obscure the deep sense in which the Catholic spirit and the Protestant spirit both need each other.

Present day divisions of the Christian world into conservative and radical may eventually come to be seen as equally unproductive and unnecessary. The conservative spirit and the radical spirit need not be regarded as alternatives. In a recent book I have tried to make the point that understanding of Protestantism is only possible to know God as a reality transcending one's

to what is actually given us in the traditions about him. But we can only know him as God insofar as we recognize the utter inadequacy of those traditions to convey more than "the outskirts of this way". (Church and Nation in a Secular Age, p. 153 ff). Continuous dialectic between the conservative spirit and the radical spirit does not make for an easy life, but then why should it? Religion, as von Hugel was fond of saying, is not meant to make us comfortable.

The spirit of protest, whether ecclesiastical or intellectual or moral, cannot be removed from Christianity without the danger of lapsing into idolatry. In this very general sense, those who shouted outside York Minster while the bastions of society enthroned a new archbishop within, were all part of the same game.

Whether a purely political protest was appropriate at that particular moment is another question altogether, and my own belief is that Christians who took part in the protest misjudged the occasion. Nevertheless, the general conjunction of ceremony and raw feeling, tradition and immediacy was, and is, a potentially fruitful one. The incident itself was trivial. But by setting this kind of thing within the much broader framework of the general outworking of the Protestant principle, it may be possible to pinpoint some of the opportunities and constraints which contemporary protesters should bear in mind.

First, and most obviously, Protestant history demonstrates how the right protest at the right moment can unleash huge and uncontrollable forces. However much Luther had a shrewd idea of what he was doing, he can hardly have guessed all its consequences, or approved them if he had. The protester has to make his point, standing as it were on the edge of the abyss, not knowing whether his hand might be the one which lights the powder train which blows up a nation, or church, or culture. Such moments in history may be rare, but they are a reminder of risks as well as opportunities, an inducement to a sense of responsibility as well as hopefulness.

Their rarity prompts the thought that contemporary protest might be more effective as a weapon if there was greater economy in its use. When innumerable people are trampling all over potential powder trains, and when the protesting attitude has become so familiar as to be disregarded, actual change becomes less likely than when protest is more restrained. It was surely the fact that the Church of England is not normally regarded as a protesting body which led to the unusual nervousness in Government circles about its attitude to nuclear weapons.

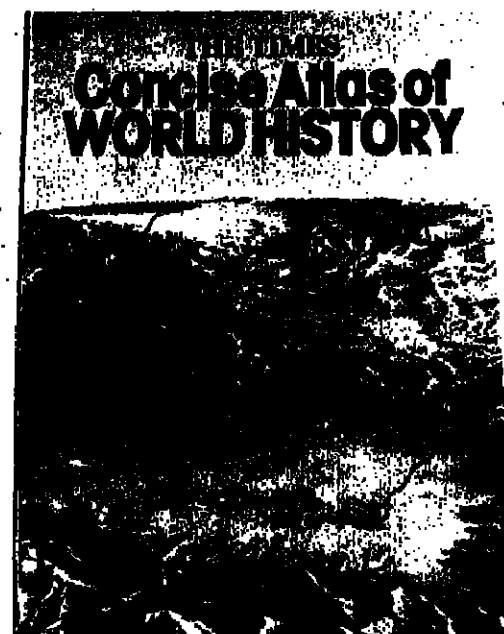
A second lesson from Protestant history follows closely from what has just been said about the scarcity value of protest. The protesting spirit can easily become institutionalized. Protest itself becomes a way of life from which it is difficult to withdraw, at least outwardly, even though the real intention

the inherent limitations of negative Protestantism. It is fairly easy to criticize protesters for not being constructive, and there is justice in the reply that they cannot be expected to do everything. When the majority ignore what seem to them to be manifest evils, it is enough to declare that evil is evil without specifying precisely what should take its place. But the danger of a negatively based protest, especially in an age when the roots of evil and the responsibility for it may be hard to identify with certainty, is that it can slide into carping criticism of everything in general, an attack on "the system" as such, whatever that might be held to mean.

The challenge to testify to some alternative vision, and to work out its implications, need not be construed as a move in the game to show up protest as futile. There is a deep sense in which the integrity of protest itself depends on the possession and articulation of some positive beliefs. The original Protestants may have been reacting to unfairness without having a clear idea of exactly what they wanted to achieve. But they were in no doubt that their motive was obedience rather than resentment. So a pertinent question to today's protesters might be: "What imperative do you believe yourself to be obeying?"

A final lesson, and perhaps the most pointed one, follows directly from what has just been said. Negative Protestantism relies on its ability to identify, and rally support against, some external enemy, whether Pope or Prime Minister or "system". The Protestant spirit, on the other hand, directs its first criticisms internally. It is the limitations of its own apprehensions, the inadequacy of its own responses, the shortcomings of its own obedience which are the first objects of attack. The protest has to be made because God stands in ultimate judgment on all human endeavours. And this is why specifically Christian protest, even when, as in Luther, it is at its most provocative, always starts in the uncomfortable knowledge that judgment begins at the household of God.

The author is Archbishop of York.



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The argument I want to advance is built up in three stages. First, I suggest that different disciplinary areas have their own identifiable knowledge structures. Second, I contend that the essential tasks of those seeking to advance understanding in any such intellectual domain will be determined in large part by the characteristic epistemology of that domain – and hence that the disciplinary cultures of academics will be conditioned in their turn by the nature of the knowledge they pursue. Finally, I put forward the notion that, because of the cultural contrasts between disciplines, an enlightened university management needs to ensure just and equitable treatment of its departments without breaching the integrity of their private lives.

The categories of knowledge I propose to single out are familiar enough: the pure sciences, the humanities, the technologies and the social sciences. Typical examples of their constituent disciplines would be physics, engineering, history and English, engineering and the more scientific aspects of medicine; and a cluster of such subjects as economics, sociology, education and the more humanistic aspects of medicine.

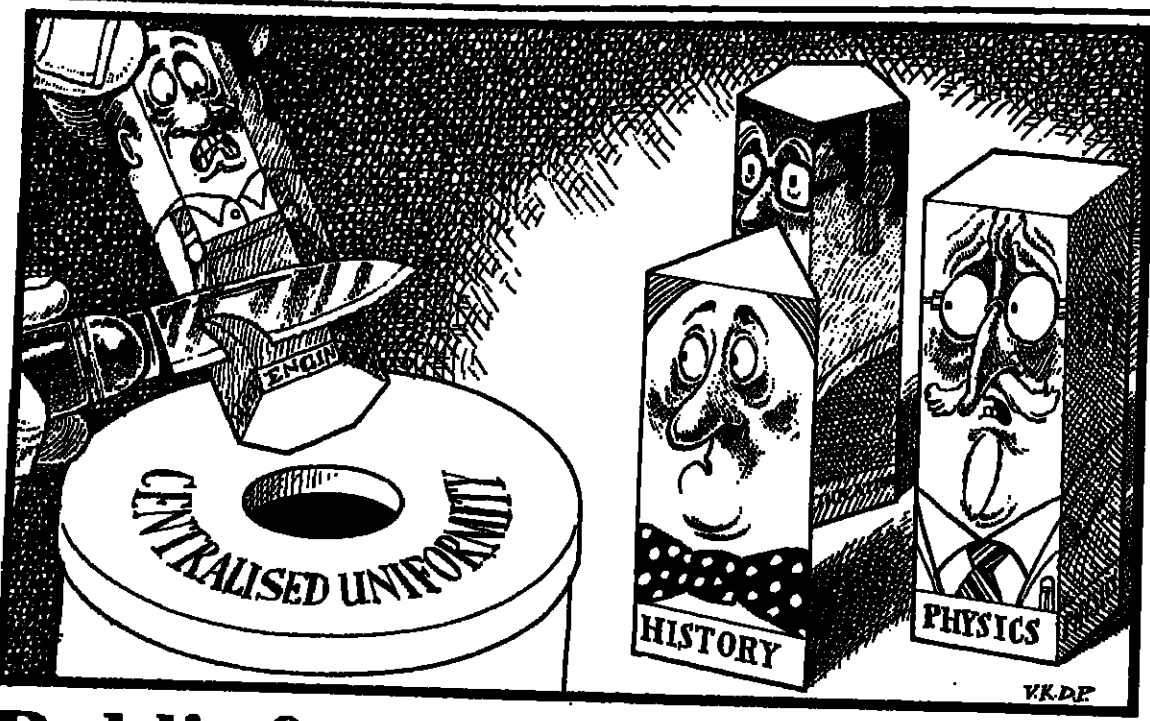
In marking the contrasts between the epistemologies of these broad areas of intellectual activity, one might note for a start that inquiry in the pure sciences is characteristically seen as cumulative. The metaphor of the moving frontier of knowledge has a clear application in this context. Each finding in a particular domain typically builds on previous findings in a linear progression. In many fields – and especially in the so-called “hard” sciences – major problems can be subdivided into smaller segments and tackled piecemeal. The structure of inquiry is like a crystal, in that it both grows by accretion and is neatly divisible; and like a tree, in that it is continuously branching out from its main stem. To say this is not to deny that major discontinuities – significant conceptual revolutions – can occur: it is merely to portray the patterns of activity which typically normal science. Another important distinguishing feature of this type of inquiry is its concern with universality, and often with quantifiability. It proceeds by simplification – by stripping away the complexities to expose the elegant regularities which underlie them. Its appropriate outcome is discovery, or at least explanation.

In antithesis, work in the humanities is typically iterative. The same basic issues recur from one generation to the next; the same phenomena are explored successively by independent inquiries, who each come up with their own particular findings. The problems which form the starting-point for most inquiries are complex, multifaceted and not easily subdivisible. The structure of investigation is organic rather than crystalline; in that it does not grow in a cumulative way; knowledge here is like a river, fluid in texture and fickle in direction. Where the scientists seek universality, the humanists typically pursue the particular instance; they embrace the qualitative, as against the quantitative, so knowledge is against habit, they seek to comprehend complexity, not to simplify it. One might say that the particular outcomes they seek are understanding, or at least interpretation.

The central concern is to produce things

Turning next to the technologies, a different picture again emerges. Here the central concern is to produce things, rather than to find things out; or at least, if one becomes involved in finding things out, it is primarily in order to produce things. Knowledge in this setting is as much knowing how as it is knowing that. It is not itself necessarily cumulative, though it may depend on cumulative knowledge. It is not altogether quantitative; since application will always call for the kind of qualitative judgement involved in design. And although technology, like pure science, values the simple over the complex, the point at which their investigations come into practical use will normally involve complications of this type of intellectual activity, one might say, are products and techniques whose merits are judged by whether they work – that is, by purposive and pragmatic criteria.

In coming to the fourth disciplinary category, the social sciences, I want to



Public faces, private lives

Tony Becher argues that there is a close connection between disciplines and the structure of inquiry

make a distinction between those which are pure, and largely theoretical, and those which are applied. All I shall say about the pure is, briefly, that they share many of the epistemological features of the humanities, though they merge at their more quantitative boundaries (theoretical economics, experimental psychology) with the pure sciences. But the applied end of social science has its own particular set of characteristics. It is comparable in some respects with the technologies, in that it regards intellectual understanding (knowing that) largely as a means to an end, namely the determination of policy and the determination of practice. Its outcomes too are functional and judged largely by their practical utility: one might describe them as being concerned with developing the protocols and procedures which govern various aspects of social welfare. But this form of intellectual activity is largely dependent on soft knowledge, not hard; on the capacity to understand and come to terms with human complexity, rather than on the ability to explain and master the material environment. It is less stable than technology, and with a less evident sense of progression, since its basis is in the frequently reformulated interpretations of complex phenomena rather than in the cumulative security of scientific findings.

Given that, at a very broad level of analysis, there are some of the characteristic patterns about the character of the inquiry, what can one go on to say about the people who engage in them? It will perhaps be simplest if we consider the cultures associated with the different epistemologies in the same sequence as before. This time, I will illustrate my comments through one particular academic subject in each category: namely physics, history, mechanical engineering and education.

In the pure sciences, as has been remarked, the questions rise for exploration in any particular specialism tend to be clearly defined – almost in the way that the next places in an uncompleted jigsaw are. In physics, as in other cognate disciplines, this bringing of research interests gives rise to a competitive lifestyle, in which groups of researchers become anxious to establish priority in finding the solution to the latest problem. This in turn gives rise to a pressure for rapid publication of results, and for close working on shared or closely-linked issues in a given specialism, in great and close-knit. And because its intellectual territory can be divided into relatively manageable problem areas, results are reasonably rapid and the output of publications is relatively high.

Physicists also have clear goals and a strong collective ethos, which puts them in a good position to act as a political pressure group in the battle for funds. Within their institutions, they usually have high standing, both because of their cosmopolitan range of academic contacts and because of their ability to attract money and resources

viewed as a whole, their culture may be said to be a predominantly task-oriented one. The humanities, in contrast, are loosely-structured and particularistic. In history, as in other comparable fields, the range of issues calling for attention is much wider than in the sciences, in that these issues are not sharply delineated by previous research. Moreover, such previous inquiries as have been carried out (being qualitative rather than quantitative) remain subject to critical reappraisal. Because the problems of history are not as readily subdivisible as those of physics, the topics people choose to work on are often more substantial, and more demanding of time. The pace of publication is in consequence fairly leisurely: the historian tends to write books, where the physicist publishes papers.

Problems in history are individual

Moreover, problems in history are largely individual rather than collective: you define your own, rather than having to allow your specialism to determine them for you. So there is little in the way of widely-shared concerns or a given shared frame of reference for any given problem. By the same token, team-work tends to be premised on the quality of individual interpretation, rather than the efficiency of collaborative effort. The tradition of individual scholarship militates against any strongly-established group norms. It also means that there is relatively little demand on outside research time, rather than for additional manpower, money or materials. The historians' culture, one might say, is a person-oriented one.

Other considerations are brought into play when it comes to the technologies. Members of mechanical engineering departments, to take a case in point, are closely linked to an external reference group of practitioners (such as applied medical scientists) who tend to be closely bound up with the time. Engineers interact in three main ways. First, they tend to move in and out of their profession, often in service to industry. Second, they serve it directly through contracts and consultancies. Third, they provide it with new manpower; and in this connection, have to earn the approval of the relevant professional bodies for their courses. The product-oriented nature of the technologies' work tends to emphasize entrepreneurial attitudes, in which patents count for as much as publications; while the close contact with the world outside the university fosters a cosmopolitan set of values. Yet perhaps for these reasons, that engineers see themselves, and are seen by others, as more conservative than their fellow-academics, and their departments as more hierarchical.

Certainly, in the classical categories of organization theory, their culture comes closest to what is called a role culture (in which power is associated with jobs rather than individuals). Finally, education – as representing the applied social sciences – has also to be responsive to an outside reference group. But teaching, together with other aspects of the welfare services (community medicine, social work, nursing and the like) is of uncertain professional status, and this uncertainty is reflected in the standing of the relevant academic counterparts. Education departments, drawing in an eclectic way on the soft knowledge of the humanities and pure social sciences, tend to be dominated by fashion, at one time depending on psychological theories, at another on sociological concepts, and at another perhaps on anthropological models. The prevailing ideas at any time seem to owe less to progress than to which particular factions happen to be dominant.

People in education departments have an external task to perform, and connections with the outside world which are not altogether dissimilar from those of the engineers. Because their energies are often deflected in outside consultancies, they tend to have a low publication profile. Along with other departments in the applied social sciences, they often embody competing schools of thought, and to the extent might be said to represent a power culture. Much of their internal energy may be spent in mediating between different interest groups; and their external influence depends less on ideological negotiation and persuasion.

Having presented such a suspiciously tidy picture, it immediately becomes necessary to start undoing it again. It will be obvious that I have been dealing in averages and archetypes rather than actualities. No discipline, let alone any broad field of study, is nearly as homogeneous as I have implied. All of them can be seen to contain, in varying proportions, at least two of the four forms of knowledge already discussed. For example, physics comprises not only hard-knowledge elements such as solid state theory, but also product-oriented ones such as the physics of materials. History has its hard edges in economic history and historical demography. Engineering has a hard core overlap with areas of mathematical physics; the sociology of knowledge and in educational philosophy. And so on, though the whole spectrum of academic inquiry. Nonetheless, the largest differences in each domain do, I think, differ along the general lines of the analysis.

Departments are the institutional embodiment of disciplines. As such, they have a dual loyalty: in their public faces to their institutions, and in their private lives to their defining culture. This dualism gives rise to a dilemma about the extent to which any institution can impose a uniform policy across the whole range of disciplinary interests it embodies. Consider, for instance, an institution

which chooses to allocate resources to departments on the basis of a number of apparently reasonable standard criteria: the ability to recruit students, the average level of outside research funding, the scope of postgraduate work, and the likely employment prospects of graduates. How would these criteria impinge on the four subject fields – physics, history, mechanical engineering and education – whose differing cultures we have already discussed?

Although any physics department might satisfy the last three criteria, it will not in the recent past (this year may mark a change in the trend) have succeeded in establishing a particularly healthy recruitment record. This is a reflection on the department's academic standing than it is on youthful attitudes towards science and the nature of school science teaching. In the case of the history department, it is most unlikely to show up well in the statistics on levels of outside funding; but that – as we have already remarked – is because it is not in the nature of a discipline which is readily amenable to team research.

The mechanical engineers would fare badly on doctoral programmes, for the simple reason that virtually all their brighter graduates are recruited into industry at starting salaries which are significantly higher than the going rate for postgraduate awards. Their small population of non-overseas doctoral students is made up mainly of mid-career professionals moving back to take up academic posts.

Finally, the education department is likely – in common with departments in the pure social sciences – for a different reason – to fail to come up to standard in terms of graduate employment. Its products are geared to a relatively narrow and undifferentiated market, which happens largely to have collapsed. Despite the imposition of strict controls on intake levels by central manpower planners, the output of newly-qualified teachers has significantly exceeded the number of posts available for them.

Obligation to seek out a workable policy

Universities, in the interests of good management, have an obligation to seek out a workable policy and ensure that it is consistently and fairly applied. But this example underlines the fact that consistency and fairness, in the context of a highly diversified organization, do not imply a wooden uniformity of practice. Managerial requirements need wherever possible to be tailored to each department's particular cultural norms. Or, to put the point another way, while universities are fully entitled to formulate the administrative and procedural ground rules which their departments should follow, the crucial academic choices of how to proceed in complying with those ground rules can most sensibly be made within the departments themselves.

In periods of retrenchment, there is an inexorable pressure – both within institutions and throughout the higher education system as a whole – towards domination by the centre. This pressure is reflected in the move towards uniformity in the public faces which departments are required to put on. In such a climate, it becomes the more important for the private lives of departments to remain as free from external control as is reasonably possible. To be sure, the least effective way of promoting the health of a vigorous and thriving culture is to smother it in a bureaucracy.

If, as I have argued, there is a close connection between disciplinary cultures and the structure of intellectual inquiry, it follows that the erosion of the autonomy of departments must have serious consequences for the universities themselves. A department that has to conform to a *modus operandi* based on values other than its own will no longer be in an effective position to promote the advancement of knowledge in its own particular field. And once this happens, the universities will have begun to abandon one of their essential functions. They will degenerate into collections of unremarkable public faces, with little or nothing in the way of private lives.

The author is professor of education at the University of Sussex. This is an abbreviated version of a public lecture given recently as part of the Visiting Scholar Programme at the University of Southampton.

Appointments

London School of Economics

Lectureships: Charles R. Bean, Economics; Fairlie W. Birnie, Law; Christopher Coker, International Planning; Anthony L. Hall, Social Planning; Anthony C. Howe, International Planning; John H. Moore, Economics; Peter T. Muchinski, Law; Denis B. O'Leary, Public Administration; Susan Powell, Operational Research; Rose Radman, Social Work; Leigh A. Roberts, Actuarial Science. Promotions to Senior Lectureships: Dr. Martin I. A. Baker, Social Administration; Dr. Christopher R. S. Dougherty, Economics; Mr. Christopher M. Langford, Demography; Dr. Frederick Rosen, Government; Dr. Nigel A. Spence, Geography; Dr. Christine M. E. Whitchead, Economics. Dr. Donald Brierley MA has been appointed to the post of principal of the Tertiary College to be established in Weymouth in September 1984. Mr Brierley took up his duties in September and will spend the next two years planning for the opening of the college. He was previously vice principal at York College, Somerset, and prior to joining York College he had teaching experience in secondary modern and grammar schools and was for a time a head of department in a public school.

London University

Readerships: Jacqueline Susan Bratton, English literature, Bedford College; James Douglas, photography and remote sensing, University College; David Moore, molecular genetics, Imperial College; Basil David Gompertz, biochemistry, University College; Alexander Gil Hovson, mathematical physics, Imperial College; Karen Legge, educational psychology, Imperial College; Roger Maxwell Mason, biochemistry, Charing Cross Hospital Medical School; Michael John Pritchard, psychiatry, United Medical and Dental Schools (St Thomas' Campus); Peter William Jack Rigby, tumour virology, Imperial College; Michael J. R. Smith, economics, Birkbeck College; Margaret Dinton Spencer, education, Institute of Education; Alan Thorpe, zoology, Queen Mary College.



Publications

The chairman of the Scottish Academic Press, Dr J. Steven Watson, principal of the University of St Andrews, has announced that an agreement has been made with the China Geological Publishing House to publish *The Stratigraphy of China*, in English, in 14 volumes over the next six years. The agreement follows meetings in Peking earlier this year. In the English language edition, each volume will have its own invited specialist editor under the general direction of Professor A. J. Smith of Bedford College, London University.

The Finance Act 1983 and the Finance No.2 Act 1983 have been published on cassette by the Certified Accountants Educational Trust. An accompanying booklet contains working examples and practical illustrations. The cassette package is available from the CAET, PO Box 244, London WC2A 3EE price £7 plus VAT. A new video on the Youth Training Scheme is aimed at helping to broaden young people's ideas on job opportunities. Produced by the Equal Opportunities Commission and the Careers and Occupational Information Centre, it questions traditional ideas about "men's work" and "women's work".

It is available for hire (free of charge to educational bodies) from the Central Film Library, CFL Vision, Chalfont Grove, Chalfont St Giles, Bucks, HP8 4RN. Hire for other organizations is £5 per day. Dissertation Abstracts Online is the new computerized version of Dissertation Abstracts, a service which provides data and author written abstracts for the latest doctoral dissertations. It will be available through Dialog and BRS beginning with the January edition of DAI. For further information, contact University Microfilms International, 300 N. Zeeb Road, Ann Arbor, MI 48106, USA.

Chairs

London University

Samuel Isaac Cohen, MD, FRCP, currently consultant psychiatrist at the London Hospital and at the Hampton Hospital, has been appointed to the Chair of Psychiatry at the London University Medical College. John Nicholas Coldstream, MA, FBA, FSA, formerly professor of archaeology at Bedford College, has been appointed to the Yates Chair of Classical Art and Archaeology at University College. Beverly Elayne Griffin Dougal, PhD, ScD, currently head of the laboratory of nuclear chemistry at the Imperial Cancer Research Fund Laboratories, has been appointed to the Chair of Virology at the Royal Postgraduate Medical School. Brian Jarman, MB, BS, PhD, MRCP, MRCP, currently senior lecturer in the department of general practice at St Mary's Hospital Medical School, has been appointed to the Chair of Primary Health Care at St Mary's Hospital Medical School. Lance Edward Lanyon BVSc, PhD, MRCS, currently assistant professor in the department of anatomy and cellular biology at Tufts University School of Veterinary Medicine, Boston, USA, has been appointed to the Chair of Veterinary Anatomy at the Royal Veterinary College. Alan David Blair Malcolm, DPhil, currently reader in zoology at St Mary's Hospital Medical School, has been appointed to the Chair of Biochemistry at Charing Cross Hospital Medical School. Charles Edward Russett, MA, currently head of the division of computing and statistics at the MITC Clinical Research Centre, Harrow, has been appointed to the Chair of Occupational Health at the London School of Hygiene and Tropical Medicine from April. Aubrey Sheilman, BDS, PhD, currently reader in community dental health at the London Hospital Medical College, has been appointed to the Chair of Community Dentistry and Dental Practice at University College. Roderick Whitefield, PhD, currently assistant lecturer in the department of oriental antiquities at the British Museum, has been appointed to the Chair of Chinese and East Asian Art at the School of Oriental and African Studies from April 1984.

Events

The Institute of British Geographers

will hold its annual conference at Durham University from January 4 to 7 inclusive. Papers from 150 speakers will cover new directions in geography, the geography of recession, the international economic crisis, historical geography of recessions, urban retailing and the recession, women's changing role in the developing world and the evaluation of planning. Details from Dr P. J. Atkins, Department of Geography, University of Durham, Durham DH1 3LE.

The Polish composer Witold Lutoslawski will be present at a concert of his music at the Music School, Palace Green, Durham, tomorrow. The concert features the cellist Lowri Blake with pianist Julian Dawson Lyell and the Brodsky String Quartet. The concert marks the occasion of the composer receiving an honorary doctorate in music from Durham University.

Glasgow University Library is mounting an exhibition of some of the works of Karelhals to mark the fifth centenary of his birth. The exhibition is on until January 14. The library possesses one of the earliest Karelhals in Britain. Highlights are the 1534 *Pantagruel* (one of four known copies) and the 1542 *Gargantua and Pantagruel* (slightly less rare but textually important).

Open University viewing

Saturday December 10

- 10.10 Consumer Decisions. Serve You Right (P51); 10.10 Governing Schools. The Community (P57); 10.10 Technology Foundation Course. Facts Are Not Enough (T101; prog 1).
- Sunday December 11**
- 10.10 The Pre-School Child. Finding in (P12; prog 4); 10.10 Parents and Teenagers. Getting Close (P14; prog 2); 10.10 The Alway Programme. 2 Intelligent Technology Based Systems and the Media. Media Interacts (P18; prog 2); 11.00 The Effective Manager. Meeting (S10); 11.00 Science Foundation Course. Preparing Matter (S10; prog 1); 11.00 Countdown to the OU - 4; 11.00 Health Choices. Making It Better (P21; prog 2); 7.30 The First Years of Life. As The Twig Is Bent (P11; prog 1).

Friday December 16

- 7.30 Into the Open - 4. Preparing Your Home and Your Family. Your Family. Your Future. (P11; prog 1); 23.40 The Foundation Course Values (T101; prog 1); repeated programmes.

Courses

COURSES AND CONFERENCES SPRING AND SUMMER 1984

With the National Institute for Careers Education and Counselling: ADMISSIONS TO HIGHER EDUCATION			
Technology	10-12 APRIL	CAMBRIDGE	
WOMEN, TECHNOLOGY & THE FUTURE	9 JULY	LONDON	
INDUSTRY, AND SCIENCE & TECHNOLOGY TEACHING	6-7 JUNE	SWINDON	
Other CRAC Courses and Conferences			
YOUTH UNEMPLOYMENT AND THE FUTURE OF WORK	23 MAY	LONDON	
A NEW ROLE FOR HIGHER EDUCATION	29-30 MARCH	CAMBRIDGE	
ENGLISH, COMMUNICATION SKILLS AND THE NEEDS OF PEOPLE IN INDUSTRY	10-11 APRIL	WOLVERHAMPTON	
ASTUTE FOR ADULT TRAINING AND CAREER DEVELOPMENT: MOTIVATION AND EFFECTIVENESS IN MANAGEMENT	25-26 JUNE	CAMBRIDGE	
For details of these and other courses and conferences please apply to the Conference Office, Careers Research and Advisory Centre, Batesman Street, Cambridge CB2 1LH. Telephone: Cambridge (0223) 354551			

BOOKS

Fighting to the end

by Peter
Newman Brooks

Luther in mid-Career, 1521-1530
by Heinrich Bornkamm
Darton, Longman & Todd, £25.00
ISBN 0 232 51595 6
Luther's Last Battles: politics and polemics, 1531-1546
by Mark U. Edwards, Jr
E. J. Brill, 60 Guilders
ISBN 90 04 06892 9

Once the party is over, the balloons burst and glitter falling everywhere like autumn leaves, what impressions do the guests retain of such essentially fleeting festivities? Some perhaps will recall a welcome night out, or even, if the host kept good wine flowing, an abiding sense of warm appreciation for hospitality received? Yet applied to the English celebration of Martin Luther's quinqucentary, perhaps not?

For instance, and as the BBC would have us believe, was not the Great Reformer merely a heretic who presumed? And how accurate was the assessment of the media in general when their spotlight largely rested on Dr Martin's protest against the way Roman ecclesiasticism purveyed "cheap grace" in a system of indulgences contrived to guarantee rapid financial return? If as radio and television audiences, magazine and newspaper readers were repeatedly informed, this was Luther's real role, it is surely remarkable that his celebrated stand for conscience before the pomp of power that was the Imperial Parliament should have remained in the memory as anything other than "wrong but wromantic".

In fact, of course, such insights are as superficial as any reminiscences of the festive spirit; and in two books published five hundred years on the reader can find the depth he needs to prevent his Luther existing as a mere cardboard cut-out. This is not to deny that the sheer idealism of young Luther will continue to intrigue the mind; but rather to insist that the mature Reformer had to persevere with highly-motivated and precisely-organized pastoral ministry if his "redemption of the Gospel" was to make any impact. Certainly the supreme merit of the late Heinrich Bornkamm's *Martin Luther in der Mitte seines Lebens* (1979) - now translated into good American English by E. Theodore Boehmann as *Luther in mid-Career* (1983) - may readily be grasped from the mastery with which biographical narrative selects subjects of concern to lasting impact.

When held in the Wartburg against his will, for example, Luther redeemed the time by translating the whole of the New Testament into easily assimilable German, his very choice of dialect aiding communication. Bornkamm likewise made plain that, for such a conservative Reformer to make headway, his attitude to fundamentals of the medieval faith like the role of the Blessed Virgin Mary and the nature of the Eucharist had to be clarified. In short, this great book describes something of a self-imposed "summit" as Dr Luther, obliged to come to terms with himself and his so-called protest, took time responsibly to survey the task ahead. For the Reformer was nothing if not an unwilling heretic; and in almost seven hundred pages of narrative, he emerges here as an idealist who both persevered and thrived on the challenges and tumults that beset his ministry between 1521 and 1530. For these were years of heated debate with Karlstadt, Mönzer, and Erasmus; years when peasants revolted and nobles strove to secure the status quo against the underdog; and a crucial period of European history when a Catholic emperor besieged in shrewdly to unite his divided subjects against the Turk. That they were also years when a pastor of genius sought to open the Scriptures to ordinary people in need of basic catechesis and instruction in the faith of Christ crucified Bornkamm fully appreciated, his magisterial judgment sifting the sources to reveal a Reformer the media normally conceal.

For if Luther genuinely sought to reform theology before finding himself obliged to restructure the visible

church, significant chapters in this definitive episode in biography spell out the care with which he set about such a superhuman task. As analysed in these pages indeed, the sheer achievement of Luther the visionary will register with readers hitherto unaware of what precisely the establishment of early Protestantism involved. After a lifetime's study of both history and theology, Bornkamm was ideally placed to write such a comprehensive and constructive account. That he failed to complete it - acting as editor of his daughter Karin poignantly recorded the fact with words translated "Here the manuscript breaks off" - is a great loss to *Lutherstudien*. But Bornkamm's work stands against the imperceptible as eloquent and triumphant testimony that Luther not only caught his vision of Pauline theology, but also lived to experience for himself in a crowded ministry the teaching conceived in those early years.

If Bornkamm has thus achieved as much for "Luther in mid-career" as Boehmann once claimed for the "young" Luther on route for Reformation, how far does Mark U. Edwards's new book on politics and polemic between 1531 and 1546 lay the keel for a ship capable of sailing the stormy seas of Luther's continuing and culminating voyage? The work of a rising young professor at Purdue, Indiana, this volume is written at an altogether different level, yet its thematic treatment of a man who might nowadays be termed "neopaganist Luther" has much to commend it. For what *Luther's Last Battles* lacks in erudition and style is made up for in a topical handling of many problems confronting the mature Reformer in a foggy period of ministry when old enmities are on the wane, with frustration tempering the fervent idealism of yesterday. This is in short the period of debate about the calling of a general council of the church - a time when Luther, in old age, chose to castigate the Jews and finally denounce the papacy. The Wittenberg Reformer who between 1520 and 1530 made such a forceful start in educating the faithful became increasingly conscious later in that decade and in the 1540s that he also had an obligation to attack the unfaithful.

By then, as historians customarily observe, even Luther's physical and intellectual powers were beginning to decline, several scholars whitewashing an angry old man they held to be no longer himself and scarcely responsible for the scurrilous polemic that flowed from his pen. Not so Dr Edwards who finds this Luther still able to take care of himself, particularly if his passion for apocalyptic is taken into account. For some time, Professor Heiko Obermann has been convinced that Luther's anti-Jewish writings can only be studied in the constructive context of such apocalyptic; and boldly

proving in precisely this jealously-guarded preserve of the Tübingen scholar, Dr Edwards extends an argument he clearly finds appealing. Conscious that he was himself living in the last days of divine dispensation on borrowed time, Luther determined with ebbing energy to inveigh against all diabolical agents, condemning Jews and zealots, the Turk and the papacy in writings that had about them the character of a considered last will and testament together with attendant codicils. After all, the devil deserved all the abuse men could heap upon him, and could only follow an argument if it was couched in the vilest language. Accordingly, when Duke Heinrich of Braunschweig-Wolfenbüttel attacked Elector Johann Friedrich in filthy terms, Luther's sense of loyalty to his secular lord and patron clearly saw the devil in such an adversary, to reply in like coin.

Ad hominem abuse was thus *ad diabolum* attack in a scurrilous entirely lacking subtlety - but for Erasmus and a few of his disciples who followed the Reformation apart, this was the period for polemic of high-sounding fury and very little light. Nor did Luther seek to avoid the issue, on one occasion styling himself "the crude woodcutter who must pioneer and hack out a path", his timid colleague Melancthon likewise holding that the times demanded denunciation of the kind only a Luther's ire could muster.

Whether treating of Jewish Old Testament exegesis or papal history therefore, Martin Luther determined so to discredit the men involved that their message itself would be discarded. Like the prophets, he used harsh words of condemnation with all the freedom of one who realized from the start that he would go unheeded. "I have done my part as a true prophet and preacher. He who does not wish to listen may go his way. I am now excused from this day forward and in eternity." And in the wake of the quinquentary, it is interesting to recall how many still refuse to give Luther any kind of hearing because of his attitude to the Jews and the papacy. In the first instance, a curious confusion convinces such that Adolf Hitler owed Luther a debt, as if it was the Wittenberg Reformer - alone, instead of almost all Christians and medieval European institutions that persecuted the Jews as usurers. And second, the vacuous spirit of much present-day ecumenism has no stomach for outspoken criticism of the Roman papacy, writing off Luther's whole ministry on any kind of false footing because of that "late-night fire" of his anti-papal crusade, *Against the Papacy Rome founded by the Devil* (1545). As Dr Edwards is at pains to emphasize, the writing was actually commissioned by Elector Johann Friedrich on the eve of the Council, his Saxon Prince knowing full well Luther's "singular spirit"



"(unique talent" would surely be a better translation of the original) for this kind of political polemic. He doubtless recalled the devastating way his favourite theologian had cut the Cardinal Albrecht down to size when that notorious Hohenzollern prelate and pluralist moved his treasured collection of relics from the uncertainty of Halle to the safety of Mainz, only to discover "two feathers and an egg of the Holy Ghost" added to the widely-circulating inventory.

Luke Cranach astutely captured the laugh-lines by the eyes of the Luther he sketched in 1545, however much that same artist also conveyed the *gravitas* of a Wittenberg colossus whose writing against the papacy proved immensely destructive. Yet convinced as he was of the battle his Reformation waged against the false church on behalf of the Lord of true Christianity, in addition to the inevitable polemic, Luther's tract contained compelling logic, primitive historical argument and considered scriptural exposition. Cranach was asked to provide illustrations, and reproduced for the reader these gave the argument an even more low and lurid hue. That Luther likewise required his printer to authenticate his name below - as if

Peter Newman Brooks is a fellow of Robinson College, Cambridge.

Types of ecstasy

Montaigne and Melancholy: the wisdom of the Essays
by M. A. Screech
Duckworth, £19.50
ISBN 0 7156 1698 6

Professor Screech is widely recognized as the *doyen des études françaises*. His study of *Ecstasy and the Poetics of Folly* has also been hailed, quite rightly, as the best book on Erasmus's personal religion. He has now produced yet another original and important book, this time on Montaigne. Montaigne's attitudes are often very different from those of Erasmus and Rabelais. But the approach adopted here is essentially the same: as in Professor Screech's earlier work, he seeks to clarify the thought of a highly original author by setting it in the intellectual milieu in which it was created. The themes at the heart of his book are also familiar, as he himself acknowledges: "When I was studying ecstasy and folly in Erasmus and Rabelais, I was led to find out how Montaigne came to terms with them."

Starting from Montaigne's assertion that his "complexion" is between the jovial and the melancholic, moderately sanguine and hot", Professor Screech reminds us that, according to the theory of the humours which underlay a great deal of Renaissance thought, melancholy was widely associated with genius. "Aristotle believed that all geniuses were melancholic; an assertion he explained with the help of Plato; he took the inspiration of the true genius to be a form of ecstatic madness closely allied to the raptures experienced by seers, prophets, poets and lovers." There was, however, a reverse side to the coin. Melancholy could inspire genius, but it could also lead to madness; "No essential distinction led Hercules to kill his children and the mania which inspired Plato of maddened Socrates the wisest of men. Melancholy was behind them all."

The most famous contemporary example of the dangerous side to melancholy and genius was the author of the *Confessions*, St Augustine. "The *Confessions* is a masterpiece of self-knowledge," says Screech, "and the danger of melancholy is vividly expressed in it; in trying to 'rise above humanity', we may end up by becoming beasts rather than angels."

The ideas of genius, melancholy, ecstasy and folly are not the only *filles du dieu* which one can attempt to guide oneself through the labyrinthine *Essays*, but they are a better guide than the traditional *stole*

epicurean evolution theory. Thanks to Professor Screech, Montaigne's espousal of the ideal of constancy can now be seen in a wider, more accurate context. Perhaps even more importantly, Professor Screech has demonstrated that it is impossible to arrive at an adequate comprehension of the *Essays* by studying them in a cultural vacuum. He shows just how dependent Montaigne is on the orthodox Christian cultural tradition which insists on the fact that man is composed of both body and soul - hence the distrust of ecstasies which ravish the soul from the body and turn *fureurs* into *folie*. More tellingly still, Professor Screech demonstrates how much Montaigne's thought is influenced by the strange mixture of Aristotelian, Platonic and Christian ideas which dominated the thought of his contemporaries.

His study may make for somewhat heavy reading for those who are not familiar with the classical and humanist culture of the French Renaissance, which should help non-French specialists. Professor Screech excels in expounding difficult, often abstruse ideas. His study will easily fulfil its avowed aim of making Montaigne's *Essays* more comprehensible and more enjoyable.

James Supple

Dr Supple is lecturer in French at the University of St Andrews.

BOOKS

Shakespeare's Rome

by Robert S. Miola
Cambridge University Press, £19.50
ISBN 0 521 25307 1

Custom identifies Shakespeare's Roman plays as those based on Plutarch: *Julius Caesar*, *Antony and Cleopatra* and *Coriolanus*. Yet, as Dr Miola argues, Shakespeare's conception of Rome and his imaginative interest in its history, ethos and literature is much more extensive, spanning his entire career from *The Rape of Lucrece* and *Titus Andronicus* to *Cymbeline*.

This interest involves a continuous and synthetic engagement with certain motifs drawn from classical myth and poetic tradition, central to which is Virgil's (or Vergil's), as Dr Miola prefers to account of the fall of Troy, the besieged city, and the heroic destiny of *plus Aeneas*. In Shakespeare's recurrent echoing and adaptation of certain Virgilian scenes in particular Dr Miola finds the deep sources of his Roman vision, a vision which becomes progressively more critical of those values that "force Romans to lead lives that are increasingly at odds with human instincts and needs".

Such a motif, which "became one of Shakespeare's most fertile poetic acquisitions", is Pyrrhus's invasion of Priam's inner sanctum and his savage slaughter of the Trojan king upon an altar, recalled by Aeneas in Book II of *Virgil's epic*. This "sacrilegious intrusion, the climactic episode in the destruction of Troy, serves as a paradigm in Shakespeare's poem for Tarquin's violation of Lucrece, which is presented in terms of the sacking of a city, while in *Titus Andronicus* the rape and mutilation of Lavinia and the subsequent familial revenge is again related to the overthrow of civil order and justice, as Virgilian, Ovidian and Lucan analogues are woven together to reinforce the Roman context of this greatest crisis. And granted the marriage blood ritual, the denial of the marriage bond and disorder in the city are also associated with each other in *Julius Caesar*, where the Virgilian simile likening the menacing Pyrrhus to an emerging snake and another snake-image from *Georgics* III may have prompted Shakespeare to make Brutus in his crucial soliloquy think of Caesar as "the adder" and "a serpent's egg".

Shakespeare's continuing absorption with Virgil in *Antony and Cleopatra* owes less to the motif of the fall of Troy, although Dr Miola claims a reminiscence of the Pyrrhus episode, than Octavius's soldiers force their way into Cleopatra's monument to capture her. More significant are the recollections of Dido and Aeneas, which serve to emphasize Shakespeare's very different view of the conflict between love and duty.

Holding Forster together

A Preface to Forster
by Christopher Gillie
Longman, £5.95 and £4.25
ISBN 0 582 35315 7 and 35314 9

Two extraordinarily evocative photographs of the novelist reproduced here set the scene of this short but ambitious introduction. For Forster's fictional world, one at the age of five with his mother, dressed in a velvet little Lord Rutherford suit with rings cascading down his shoulders, the other in old age in his rooms at King's standing near his bookshelves and looking into the sunlight which falls across his bed on to his typewriter. He looks extremely well in both.

Christopher Gillie describes in detail Forster's family background and the intellectual setting in which he grew up, taking the reader back to Mill and

including, of course, Antony's notably un-Virgilian image of those two former lovers reunited in the afterlife. Many of the other parallels involved, including Mars and Venus, Hercules and Omphale, and the conventional arming of the epic hero, add to the ironic and ambivalent treatment of Roman heroic values in the play.

The critical scrutiny of these values is certainly continued in *Coriolanus*, but the gist of allusion which yields to Dr Miola's mill is relatively thin and lacking in specific point. The comparison between Coriolanus himself and Turnus in the second half of the *Aeneid*, "the warrior hero who belongs on the battlefield, not in the more complex if less exalted space within city walls," does not greatly enhance our understanding of the hero or the play, while it seems unnecessary to cite extracts from Cicero and Quintilian in order to demonstrate at some length that Coriolanus is not a successful orator.

The chapter on *Cymbeline* neatly rounds off the book and its central argument, here Shakespeare is seen recapitulating his own earliest work and tempering Roman severity with the kinder virtues of the new nation, Britain. *Lucrece* and *Titus*

Andronicus in particular are playfully recalled as Iachimo, that deceitful invader, emerges from his version of the wooden horse in Imogen's bedroom and finds that her bedtime reading has been Ovid's tale of Tereus and Philomela. Tragedy is diverted into comedy as Imogen escapes from Cloten's lustful clutches, chooses disguise rather than death, and, unlike Cleopatra, prefers submission to the invading Romans. Posthumus's Roman sense of honour (the wage like that made by Collatine) yields to repentance and humility, and he goes to war not for fame and conquest but as an anonymous British peasant, subsequently forgiving his defeated enemy and relinquishing his wish to die after the ghostly family have rallied round him in prison.

Such a farrago of classical motifs revived and revised and turned inside out suggest that in *Cymbeline* Shakespeare may well have been looking back upon what Dr Miola describes as "the gloriously slapdash character of Elizabethan classicism".

D. J. Palmer

D. J. Palmer is professor of English at the University of Manchester.

Values in question

Ben Jonson: to the First Folio
by Richard Dutton
Cambridge University Press, £15.00
and £4.95
ISBN 0 521 24313 0 and 28596 8

Dr Dutton limits his study to the 1616 folio (apart from the concluding chapter on *Bartholomew Fair*), because it represents Jonson's own selection of his masques, plays and poems, and embodies the image of himself as the universal man of letters by which he wished to be known.

Dr Dutton argues that the whole body of Jonson's mature work has a common moral and social intention and uses throughout the same technique to fulfil it. Jonson's target is the "understanding" man, and his method, after the early plays, is not to lay down the moral law in explicit terms but to embody without comment different sets of values which force the auditor to ponder and form his own moral judgment. In *Volpone*, for example, the satanic vitality of Volpone is strong enough not only to dwarf the role of his suitors but even to call into question the values of Celia and Bonario, so that an audience is driven to consider what active qualities virtue needs if it is to survive in a corrupt world.

In the *Alchemist*, the "commonwealth" set up by Doll and her fellows presents a more dangerous and universal aspect than we are apt to recognize, since it promises the gratification of everyone's private fantasies. Surly's uncertain virtue is no match for it, and even Lovewit could be called its final victim, since his triumph consists only in the acquisition of Mammon's old iron, and the doubtful blessing of

Dame Pliant for a wife. The play of moral tolerance with which the note seems to end is a deceptive one, as is also the case in *Bartholomew Fair*, where the plea that no one is fit to judge since we are all sons of Adam is made significantly by the corrupt Quarlous. Jonson's major comedies in fact seem to raise moral questions rather than provide set answers: they are rhetorical strategies to make an audience think.

Dr Dutton suggests that the poems work in the same way, by the juxtaposition of contrasting portraits and values rather than by overt didacticism. In *The Forest*, for example, "Drift to me only" follows immediately after "To Sicknesse", and in the *Epigrams*, the one to his revered mentor, the scholar William Camden, is sandwiched between "To Dr Empiric" and "On Court-Worms". In the masques, the systematic exploitation of the anti-masque achieves the same effect, although the main masque with its idealized values functions in a different way, teaching by praise and challenging the royal actors to be worthy of the roles they are performing. Jonson's underlying assumption seems to be that human nature is corrupt, but that it has, nevertheless, a potential for virtue which it is the poet's responsibility to foster. The ultimate moral responsibility rests, however, with the individual himself: there is no place in Jonson's code for the mysteries of grace and divine intervention which are so apparent in Shakespeare's late romances.

His analysis throws new light on the curiously ambiguous morality of Jonson's last plays; but it does not, to my mind, place enough emphasis on the "delight" which Jonson always insists must be the primary quality of comedy, whatever profit may be mixed with it. The end product is to be an audience whose cheeks are "red with laughter", even if soberer considerations subsequently raise their heads. Indeed, the delight and laughter which

carefully in the first half of this study. The parochial Cambridge ethos with its concern as to whether a man had an "inside" or not has given way to the extraordinary scope of the last novel, with its negation of the last novel, its sense of verities and finally so effortlessly to verities, its infinite regress of "humanity grading and drifting beyond the educated vision, until no earthly invitation can embrace it".

All this leads us so far and so suddenly from Forster's apparent origins that the author has no space left to redefine his terms to accommodate this breakthrough. Here one senses that there is a bigger book trying to get out. But the critic's problem is illuminated as a pale reflection of the novelist's. How did he seek to hold it all together? Or in Virginia Woolf's terms, what can he do next? His answer was, with consummate timing, to end his career as a novelist exactly halfway through his long life and become a writer "more and more famous with every book he did not write".

David Carroll

David Carroll is professor of English at the University of Lancaster.



A small mosaic representing travelling musicians taken from *The Cultural History of Rome* by Henri Stierlin, (Aurum, £7.95).

Jonson provides are the most positive and unambiguous expression of his own moral beliefs. They spring from his own absolute mastery of his medium, and make us conscious of Jonson himself, at the centre of a machine, significantly by the corrupt Quarlous. Jonson's major comedies in fact seem to raise moral questions rather than provide set answers: they are rhetorical strategies to make an audience think.

This, however, is a minor caveat against a book which is stimulating, balanced and very readable. Dr Dutton's work is more than just an introduction to Jonson: it suggests new perspectives on the most familiar works and rehabilitates the neglected

ones such as *The Poetaster* and *Catharine*. In addition there are interesting conjectures about the importance of the child actors, the use of gesture and stage-business by actors when they are not speaking, and a valuable investigation of possible references to the Gunpowder Plot, in which Jonson himself may have been involved as a double-agent. Altogether this is a book which offers profit and pleasure to the student and the Jonson scholar alike.

Maurice Evans

Maurice Evans was until recently professor of English at the University of Exeter.

METHUEN

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LESLIE HANNAH
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METHUEN
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John Milton Keynes (1900-1967) Fellow, 1947

BOOKS

Lines of descent

Genetics
by J. R. S. Fincham
John Wright, £12.50
ISBN 0 7236 0661 7

Genes
by Benjamin Lewin
Wiley, £27.85
ISBN 0 471 09316 5

Genetics has now become a popular subject, considered by many sixth-formers contemplating higher education as a new and exciting biological discipline.

During the past five years, two major changes can be identified which I believe are responsible for the widespread acknowledgement that genetics is a subject of major biological and medical significance. First, the revolutionary new techniques of genetic engineering are providing the basis for the industrial production of hitherto scarce and expensive medical, agricultural and food products and for the construction of new organisms tailor-made for specific tasks - for example, the purification of contaminated water, the utilization of waste, and attempts to increase the efficiency of traditional biological processes like fermentation. The commercial importance of these developments has created a considerable demand for graduates trained in genetics and related disciplines.

Second, the accumulation of much new data has provided further proof of the universality of many genetic processes. Genetics as a subject has in fact existed for some time as two major branches - classical genetics (largely concerned with higher organisms) and molecular (or microbial) genetics. This latter, younger branch has followed a pathway overlapping more with biochemistry than its parent discipline, the reasons being that prokaryotes (bacteria and viruses) have small chromosomes containing only a few genes and that it has long been possible to obtain highly purified and concentrated preparations of microbial DNA and RNA suitable for molecular analysis. Recent technical developments, particularly associated with genetic engineering, have now made it possible to isolate equivalent-sized chromosomes from any organism with the same degree of purity and concentration. The effect of this has been to produce some quite dramatic advances in our knowledge of the molecular genetics of higher organisms (eukaryotes). With this has come a fusion of the two branches of genetics and the realization that an understanding of such complex genetic interactions as those which determine development and evolution is within sight. There is no shortage of ideas, and genetics is now in full swing, being driven to a large extent by the pace at which the technology advances.

These developments have inevitably influenced the way the subject is taught and the supporting textbooks. Although components of genetics are now incorporated into various undergraduate courses, it is taught mainly in two contexts: as courses in genetics, embracing the classical and molecular aspects of the subject and as courses in molecular biology which combine molecular genetics with biochemistry and cell biology. Professor Fincham's book is in the former category, whereas Dr Lewin's is distinctly molecular in outlook. Although they cover some common ground, these two books are written from different viewpoints: they would therefore be considered complementary rather than as competitors. Both are excellent reviews of the subject and, at 600-700 pages, each is a tour de force - both authors managing to synthesize what is now a vast body of complex information into highly readable, coherent and authoritative texts.

Genetics is a genetics book, as it is rooted in the concepts of classical genetics and adopts the approach of incorporating the newer molecular aspects of the subject into the classical framework. Its line of descent stems from such books as *Principles of Genetics* by Slonim, Dini and Dobzhansky and that model of clarity *General Genetics* by Sibley and Owen. Although Professor Fincham enters a competitive field - I have, of course,



Ulmus folio glabro Georg Ehret. Taken from R. H. Richens's *Elm*, a comprehensive monograph on one of the three principal landscape trees of England, published by Cambridge University Press at £35.00. Besides ecology, history, use and distribution, the book also considers the place of the Elm in literature and the visual arts.

bookshelf ten textbooks of the same general type published in the past five years - his excellent textbook succeeds well. This is partly because several important topics have very recently become much clearer - for example, transposition, genetic recombination, DNA repair, eukaryote gene expression and oncogenes - and partly because the author, with his unusual breadth of knowledge and understanding of genetics, is in a better position than most to attempt the fusion of genetics into the single subject that it has become. While reading the book, I was reminded of the direct and uncutting style of his lectures that I listened to over 25 years ago.

Divided into 19 chapters - each ending with a brief summary, selected further reading (mostly review articles) and a set of carefully prepared problems (with full and constructive answers) - the book proceeds from a discussion of the components of heredity (DNA, chromosomes, and the sexual cycle) and eukaryote chromosome genetics to cytogenetics and the consequences of chromosome variation. This might seem to be a rather separate section on eukaryote genetics, but with chapters dealing separately with extrachromosomal heredity, continuous variation and paraxial analysis (incorporating an interesting account of the use of non-sexual methods for the genetic analysis of cells in culture). The molecular aspects of genetics are grouped into a major section of eight chapters devoted to microbial genetics, mutation (chapter 13 is a fine exposition of the enormous value of mutations other than as genetic markers), the methods and applications of genetic engineering and differentiation. The book ends with accounts of population genetics and human genetics, and a selection of primary references.

Genes is an attractively produced book, with large, two-tone diagrams in the style of *Scientific American*. Being concerned with genes rather than genetics, its scope is more limited and correspondingly more detailed. Emphasis is given to the molecular biology of genes, its general approach being reminiscent of J. D. Watson's seminal book on this subject. Ten parts, each consisting of three to five chapters on related topics, cover such major areas as gene structure, protein synthesis, transcription, regulation of DNA (replication, repair and recombination) and the dynamic genome (transposable and mobile elements, gene amplification, translocation and antibody diversity). Each chapter has a short list of references for further reading, and there is a useful glossary at the end of the book.

Eukaryotes and prokaryotes are allocated equal space, again reflecting the recent explosion of data on eukaryotic gene structure and function. Particularly valuable sections are those dealing with 'molecular elements': eukaryotic RNA processing, and eukaryotic genome organization, and a discussion of related sequences. I am not aware of any other textbooks which deal with these topics in such clear

detail.

Dr Lewin, the editor of *Cell*, has achieved a fine balance of genetics and biochemistry in his writing and has brought together in this single volume the experience gained from his encyclopaedic three-volume treatise on *Gene Expression*.

D. A. Ritchie

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Petroleum origins

An Introduction to the Physics and Chemistry of Petroleum
by R. R. F. Kinghorn
Wiley, £19.50
ISBN 0 471 90054 0

Petroleum is a natural resource of considerable general interest, especially in this country, although we have come to take the revenue from the North Sea for granted - somewhat unwisely as it will not last all that much longer. All the more reason, therefore, to know what petroleum is and how it is formed and, hence, how we might find more of it.

The past ten years have seen major advances in our understanding of the nature and origin of petroleum. In several, normally rather separate disciplines, key developments of technique and theory have led to an interplay which has brought petroleum science new confidence and predictive power. What is the current view of the origin of petroleum?

First, organic matter, originated by phytoplankton blooms, was deposited in the bottom sediments of ancient seas, there to be worked over by the bottom living bacteria. Subsequent burial under kilometres of sediments, deposited over millions of years, resulted in the raised temperatures experienced at those depths in the Earth's crust. The lipids (fatty portions) of the debris suffered a slow 'cooking', releasing a complex mixture of hydrocarbons - the petroleum - which migrated out and up along faults and other pathways, eventually pooling in the porous rocks of reservoir traps. So much for the 'how' - derived from new chemical knowledge of the nature of the buried organic matter and of the effect of the organic debris can be followed downwards into the Earth's crust by drilling. A continuity in hydrocarbon generation is found, which usually maximizes three or four kilometres down - the so-called 'oil window'. Below that, carbonization increasingly takes over. As for 'where', the right deposits, in a suitable environment, depend on the relationship between tectonic

dynamics (plate tectonics), palaeogeography, oceanic circulation, nutrient-rich surface waters, plankton blooms and anoxic bottom conditions. The appropriate heat flux and time then relate in part to the depth of burial and the thickness and nature of the Earth's crust at that site. How to find it? Using caution and imagination, and the techniques of structural geology, sedimentology, geophysics and geochemistry, mathematical 'models' can be devised and then computer manipulated in the four dimensions of space and time. However, although the economic prizes are becoming increasingly harder to win, further data acquisition and research effort continue to provide the best basis for successful prediction.

In his preface, Dr Kinghorn indicates that his book is not a research text, but rather 'an introduction to the story of petroleum and the use of organic geochemistry in exploration'. Organic geochemistry is the study of the origin and fate of carbon compounds (including petroleum) and organic matter in the Earth's crust. However, although his aims of introducing geology students at all levels to the 'basic principles of oil field fluid origin, behaviour, alteration and application' and teach them the 'language of organic geochemistry' are worthy, his book will not achieve them. Furthermore, it lacks precision and panache. Although there is a need for a book of this type, the author should have identified better the growth areas and provided more of a synthesis.

Kinghorn's book owes a great deal to such volumes as Tissot and Welte's *Petroleum Formation and Occurrence*, and most of the illustrations and tables are directly reproduced from such sources. Although some sections are reasonably up-to-date, others show a rather uncritical appraisal of the literature and read as if written directly from filing cards, with one paragraph per literature citation. Old and recent references often mingle anachronistically and the perspective on developments goes awry. More seriously, some processes are presented to the reader not as working hypotheses but as guaranteed phenomena. Especially disappointing is the lack of detailed case histories, illustrated with appropriate maps, sections, and chemical and physical data.

Despite its faults and the numerous errors in diagrams, formulae and references, this book does bring together much useful material on a wide range of topics. Particularly disappointing, however, was Kinghorn's somewhat cursory account of the molecular characterization of petroleum, in which he fails to mention newly established links between the natural product organic chemistry of marine plankton and bacteria and of terrestrial higher plants, the organic matter of sediments and the hydrocarbons of crude oils. Overall, the feeling of direct contact with active research is missing.

Geoffrey Eglinton

Geoffrey Eglinton is professor of organic geochemistry at the University of Bristol.

Global topology

Topology and Geometry for Physicists
by Charles Nash and Siddhartha Sen
Academic Press, £25.00
ISBN 0 12 514080 0

At last: topology without tears. This is a book to teach topology to physicists and others with a relatively unsophisticated mathematical background. The emphasis is on those aspects of global topology which are finding increasing application in modern physics, particularly in particle and solid-state physics.

Writing in a straightforward, readable style, the authors manage not only to describe their subject matter but to justify and explain it. In terms that physicists should find readily accessible, their book should be suitable for self-study or for part of a postgraduate course in mathematical physics. Topology, the perspective of physics, is one of the most abstract and remote provinces of pure mathematics. But it has become dramatically with the entry of Lie groups and gauge theories into particle physics, and the understanding that phase transi-

tions and other phenomena of continuum physics have mathematical analogues in gauge theory. By bridging the gap between the pure-mathematical literature and the mathematical background of the typical physicist, this book should satisfy a real need. The topological subjects covered include mappings and topological invariants, homotopy, homology, cohomology, fibre bundles, and Morse theory. Applications include Yang-Mills theory (and other gauge theories), symmetry breaking in crystals, defects in ordered media, and Yang-Mills instantons and monopoles. There is also a small amount of 'local' differential geometry, such as exterior differentiation and Lie differentiation, but generally the authors introduce only as much as is necessary for subsequent topological theory. There are no non-topological applications in physics. In this sense this book exactly complements my own *Geometrical Methods of Mathematical Physics* (Cambridge University Press), which concentrates on the differential structure and does little topology.

Bernard Schutz

Bernard Schutz is reader in general relativity at University College, Cardiff.

Road to analysis

Undergraduate Analysis
by Serge Lang
Springer, DM94.00
ISBN 3 540 90800 5

An old book in a new wrapper, *Undergraduate Analysis* is a revised version of the same author's *Analysis* (Addison-Wesley, 1968). Lang has designed his text as a first course in analysis and presupposes the mathematical maturity acquired by students who will ordinarily have had two years of calculus. He has also intended that it be used for an honours course for first-year and second-year university students who have had calculus at American high schools.

Organized into five main parts (review of calculus, convergence, applications of the integral, calculus in vector spaces, and multiple integration), the book's principal aim is the extension of the differential and integral calculus from the real line into the setting of a normed vector space. For most students in the United Kingdom the review of calculus would be their introduction to analysis, as they arrive at university with little more than a smattering of fluxions.

Unfortunately, however, there are many points at which, although they might irritate but not perhaps greatly disturb a more experienced student, will create real difficulty for the beginner. For example, early in the text the concept of union is defined only for a pair of sets. Soon after, the concept is used for an infinite sequence of sets without explanation. The definition of limit of a function at a point is not the standard one and it is used rather loosely in the definition of differentiability. Not unreasonably, no attempt is made to construct the real numbers from more primitive objects; unfortunately, however, an assertion is made to the effect that in an ordered field Cauchy completeness implies the least upper bound property. The falsity of this can be seen by considering the completion of a non-Archimedean ordered field.

Even worse, from the viewpoint of practical analysis, useful results such as the first mean value theorem for integrals and the subadditivity property of upper limits are stated incorrectly; and, as exercises, we are asked to prove them. There is good coverage, however, of a number of interesting topics, and pleasant features of the book include a nice treatment of elementary functions and a concise introduction to Fourier series, with other classical aspects of analysis, with Euclid said that 'there is no royal road to geometry'. Nor is there any analysis. Lang has fashioned a path offering several tempting vistas but with many a pitfall.

Ivor Maddox

Ivor Maddox is professor of pure mathematics at the Queen's University of Belfast.

BOOKS

Crystal lattices

Crystal Symmetry: theory of colour crystallography
by M. A. Jaswon and M. A. Rose
Ellis Horwood: Wiley,
£18.50 and £8.50
ISBN 0 85312 229 6 and 520 1

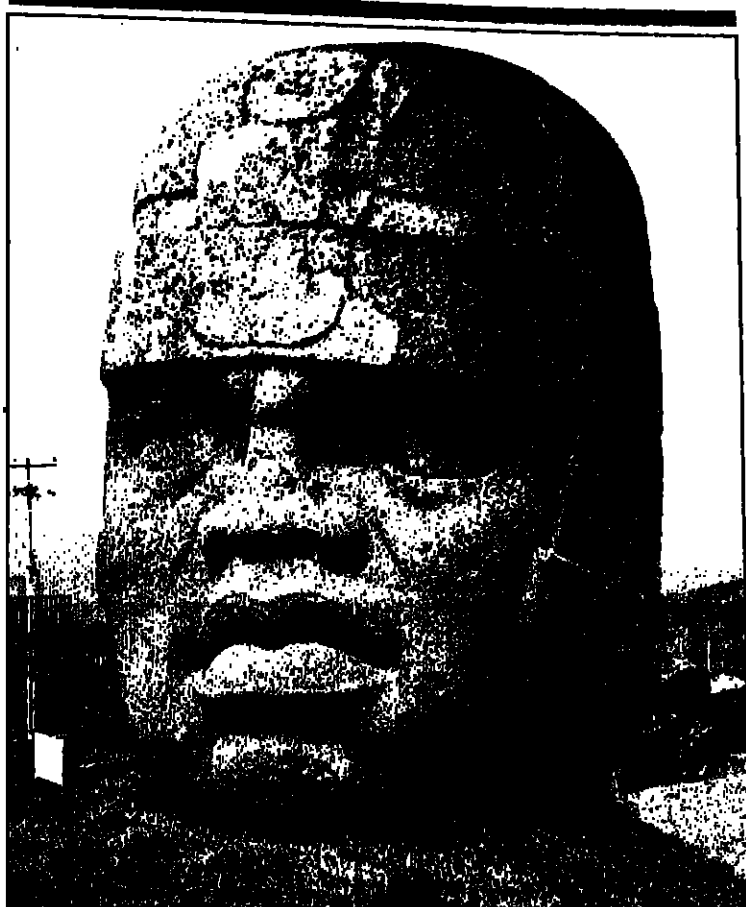
There are many ways in which molecules can differ in composition or, when two species are composed of the same set of atoms, by the arrangement of these atoms in space. However, if two molecules are identical in terms of composition and spatial arrangement, they may yet differ. These differences, in electronic and nuclear properties, for instance, are an area of considerable current research activity.

Much less explored are the consequences of arranging such identical yet different molecules in a crystal lattice. Thus, a paramagnetic species of molecule containing unpaired electrons with electron spin equals plus or minus one half may be arranged in a crystal lattice such that those molecules with spin of plus one half occupy one sub-set of lattice positions and those with spin of minus one half occupy a second sub-set. Whereas x-ray diffraction studies would not distinguish between the two spin types - so that the spin-ordering of the lattice would not be revealed - these arrangements may be revealed by diffraction studies using polarized neutrons. What, then, are the possible relationships between the spatial arrangements revealed by the x-ray and neutron studies?

The idea of differences beyond those of space leads naturally to differences in colour. The difference between spin of plus one half and spin of minus one half corresponds to the difference between two colours, conventionally chosen to be black and white. An additional operation, over and above those appropriate to three dimensions, is required to interconvert objects of different colour or of different spin. Corresponding to the space groups of x-ray crystallography are the black and white, the grey and the colourless space groups revealed by polarized neutron diffraction. Two-colour groups were first introduced in the context of antisymmetry by Shubnikov in 1944; the extension of the concept to other colour groups of crystallographic importance, the three, four and six colour groups, has followed, in the work of Zamorazov (1967). Only the two-colour case is contained within Jaswon and Rose's book, although the title is such that other cases might be expected.

The book is concerned with conventional space groups and the two-colour space groups; the concern is with their derivation and not with their application. Despite its title, about four-fifths of the book is devoted to the classical space groups and about one-fifth to the two-colour groups. The book discusses aspects of the subject commonly by physicists, but the number of the conventional space groups which contain no glide planes or screw axes would be given by the sum of products of the number of crystallographic point groups compatible with each of the seven crystal classes multiplied by the number of Bravais lattices appropriate to the class. This leads to a total of 46, a total to be compared to the 73 symmorphic space groups which actually exist. Where the other seven come from, the answer will be found in the book, but I know of no other source with so detailed an explanation.

I am afraid that I cannot be as warm in my report on much of the rest of the book. Chemists are not listed among the expected readership of the book. Indeed, it is not clear just what background readers are expected to have. Crystallographic projections are used but inadequately explained; the transition from symmetry elements to symmetry operations is abrupt and without explanation. The title of a section but not of a chapter is 'The symmetry of the associated factor groups' (factor groups are not defined until the end of the book). The symbol for a space product simply appears as an



A typical Olmec colossal head (height 2.8 metres), at San Lorenzo Tenochtitlan in central Mexico. Taken from *Tula: the Toltec capital of ancient Mexico* by Richard A. Diehl, published by Thames and Hudson at £16.00.

equation without definition or use of the term 'direct product'. It is unfortunate that the first equation in the chapter on the mathematical formulation of point groups should contain two printing errors.

Although there are sections of real value, my overall impression is that this book, devoted to a detailed enumeration of space and two-colour space groups but devoid of application, will not have wide appeal. Its *aufbau* approach is attractive, but this is more than offset by the use of ex cathedra statements, which lead to the frequent, but unanswered, question 'why?'

S.F.A. Kettle

S.F.A. Kettle is professor of chemical sciences at the University of East Anglia.

Powers of attraction

Superconducting Magnets
by Martin N. Wilson
Oxford University Press, £17.50
ISBN 0 19 854805 2

Superconductivity, the complete disappearance of electrical resistance in some metals below a certain very low critical temperature, was discovered by Onnes in 1911. Thus there arose a possibility of carrying current with no ohmic loss and therefore no power consumption, except for the energy required to liquefy the helium which keeps the superconductor below its critical temperature.

For many years, however, this phenomenon remained a laboratory curiosity because it was found that superconducting metals have a very low tolerance of magnetic fields, so that above a small critical flux density they revert to their normal resistive state. The metals were therefore unsuitable for high-power superconducting magnets, and it was not until the discovery of high-field superconducting alloys about 25 years ago that the way opened for the commercial use of superconductivity.

There are now a large number of applications ranging from tiny devices using the Josephson effect, through electrical machines of various types and sizes, superconducting magnets for nuclear magnetic resonance (NMR) body scanners, to the giant magnets used in the particle accelerators and bubble chambers of high-energy physics. Many more applications are under consideration - notably for various types of magnetic separation, very large power station generators, and the magnetic confinement of the plasma in nuclear fusion reactors. The book is a comprehensive and authoritative survey of the subject, written by a leading expert in the field.

With so much activity in this subject - especially the use of superconductivity to produce very strong magnetic fields for which conventional magnets would be either impracticable or too expensive to operate - the appearance of this book by a well-known worker in this field is most timely. Magnet designers and users will find here a wealth of information and detail that is either not to be found in the presently available literature or only in technical papers from a variety of sources. For specialists the book is essential reading; and those on the fringe of the subject - for example, developers and users of equipment containing superconducting magnets - will require frequent access to a copy.

The first three short chapters introduce superconductivity, its applications, and magnet configurations. Those readers for whom this topic is new, however, will probably first need to read a simpler but more detailed introduction, as the author rapidly moves on to a series of specialist topics in chapters four to nine. Among other things, these contain accounts of the mechanical properties of superconducting and other materials, cryogenic stabilization, the phenomenon of flux pinning, alternating fields and associated losses, and quenching and protection techniques. The author also provides in this section of the book a fascinating outline of current work on degradation and training. Training is the technical term for the process of repeatedly raising the current in a new magnet until it quenches (reverts to its normal state) and eventually the desired current is achieved. Degradation, on the other hand, is the unexpected quenching of a magnet in service and is due to the onset of thermal and magnetic instability. These related subjects have until recently been surrounded in mystery and are indeed not yet fully understood.

Chapter ten, a short survey of measurement techniques, is followed by a useful chapter on the design of current leads to magnets and methods of supplying the current. Chapter eleven surveys the properties of the two most popular superconducting alloys, niobium-titanium and niobium-tin, and their manufacture, together with a brief mention of some other alloys. The book concludes with an excellent description of the construction of different types of magnet.

Almost inevitably in an advanced book on a complex subject, the presentation does not flow easily from chapter to chapter. Indeed, although from the point of view of some chapters the book could be regarded as a textbook, it is rather a reference book - one of outstanding quality, superbly produced.

R. L. Stoll

R. L. Stoll is reader in electrical engineering at the University of Southampton.

Molecular emphasis

Biochemistry
edited by Geoffrey Zubay
Addison-Wesley, £16.95
ISBN 0 201 09091 0

The enormous and continuing growth of biochemistry during the past thirty years has made the task of writing a single, comprehensive textbook truly Herculean. Indeed it can reasonably be argued that it is no longer possible for one individual to succeed in this task.

Several valiant authors, among them Stryer, Bohinski, Lehninger, Metzler and Rawn, continue the struggle. However, it comes as no surprise that one publisher should try to pool the expertise of many distinguished biochemists in a collective work. *Biochemistry* represents the combined efforts of 26 scholars under the direction of Geoffrey Zubay (Columbia University) as coordinating author. The result is an encyclopaedic text of more than 1200 pages which is both authoritative and up-to-date.

The book's 32 chapters are organized into five parts: protein structure and function; carbohydrate metabolism and the generation of chemical energy; lipids and membranes; nucleic acids and protein metabolism; and special aspects of biochemistry. Coverage in the first four parts is good, and as one might expect of a book with Irving Geis as coauthor, there are many excellent diagrams. All the essential material is included as well as much interesting and useful additional material. Indeed, in some areas instructors and students will need to select topics carefully as the coverage is too deep for many undergraduate courses. The overall emphasis is molecular rather than physiological and if one considers the choice of special topics in part five and the

extensive coverage of gene expression in part four the book could reasonably be described as a molecular biology text with a biochemical emphasis. Thus, although there are only 42 pages on hormone action, a subject often treated in great depth in biochemistry courses, there are 50 each on animal viruses and the origin of life. Indeed, it is generally true that the more clinically related aspects of biochemistry either are not treated at all or are covered in much less depth than the molecular biological aspects.

Given the breadth of biochemistry, there are bound to be disagreements about the topics chosen for inclusion in any textbook and about the relative depth of coverage of each topic included. These problems are compounded by rapid advances in the subject, and it is inevitable that in some areas students will need to consult both specialist monographs and the recent literature to supplement textbook coverage. However, there is undoubtedly a real need for a single comprehensive reference book which undergraduates can use as the framework for their studies. Professor Zubay and his colleagues are to be congratulated on producing an excellent new book that will certainly fill this role for several years.

Despite the large number of contributors, the depth of coverage is consistent and the text is clearly written at a level suitable for final-year undergraduates and research students. It is too advanced for an introductory biochemistry course, for which the shorter texts by Stryer and Bohinski are far more suitable. In the British context it will be most useful for undergraduates taking honours in biochemistry, molecular biology and for MSc and PhD students seeking to strengthen their knowledge of these subjects.

J. R. Coggins

J. R. Coggins is senior lecturer in biochemistry at the University of Glasgow.

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Universities

THE OPEN UNIVERSITY

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Appointments for one or two weeks are available at the Open University's summer schools held at universities throughout Great Britain between 7th July and 9th September 1984.

Tutor Posts in the Faculty of Arts

Tutors qualified in:
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Tutor Posts in the Faculty of Social Sciences

D102 - Making Sense of Society.
Tutors experienced in teaching introductory level Social Science and in interdisciplinary teaching, qualified in one or more of: Economics, Human Geography, Politics, Psychology, Sociology, to teach in one of three interdisciplinary modules - Crime and Conflict, The Fight for Shiloh Bar, Mass Media and Society, Sexual Divisions and Society.

D5262 - Introduction to Psychology

Tutors with experience of Experimental Methodology in different areas of Psychology.

D5303 - Cognitive Psychology

Tutors qualified in Experimental Psychology, Computer experience desirable.

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Tutors qualified to teach Modern Geography, especially Urban, Retailing, Rural Social Geography, Statistical Techniques.

Tutor Posts in the Faculty of Mathematics

Tutors for the following courses: Mathematics: A Foundation Course (M101), Introduction to pure Mathematics (M203), An Introduction to Calculus (M205), Mathematical Models and Methods (M204).

Tutor Posts in the Faculty of Science

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Tutor Posts in the Faculty of Technology

Tutors qualified in: Elementary Mathematics and Modelling (for technology) (TM231), Materials Science (T252), Systems (design, planning and management of social or technical systems), and Engineering Mechanics (Solids) (T232).

T201 - Living with Technology

Tutors having teaching experience and qualifications and/or interests in the areas of Energy Policy and Resources, Microprocessors, Water Quality, Materials Science/Metallurgy, Mechanical Engineering, Electrical/Electronic Engineering.

T285 - Introductory Electronics, and T291 - Instrumentation

Tutors qualified in Electronics and/or Instrumentation; previous teaching experience an advantage.

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Tutors to facilitate creative projects in a range of practical arts.

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Tutors with experience of teaching Third World Studies in Higher Education.

U231 - The Changing Experience of Women

Tutors with experience of teaching Women's Studies within Higher Education or Adult Education.

Demonstrator Posts

Graduates in Science to work in areas of Biology, Chemistry, Physics, Earth Sciences. Graduates in Science and Engineering to work in areas of Materials Science, Metallurgy, Corrosion, Systems, Chemistry (water quality experiments), Electronics/Computing (microprocessor activity), Graduates in Psychology, Graduates in Mathematics, Science or Technology with some knowledge of Dynamics.

Application Procedures

For further particulars and an application form send a postcard to the Tutor Office (S2/2), P.O. Box 82, The Open University, Milton Keynes, MK7 8AU. Completed application forms must reach the Open University by Monday 30th January 1984.

UNIVERSITY OF ZIMBABWE

Applications are invited for the following posts:

LECTURESHIP/SENIOR LECTURESHIP

Department of Modern Languages (French)

The post is for lecturership in French. Applicants must have at least a good first degree and preferably a research qualification. A good knowledge of written and spoken French and a period of residence in France would be a recommendation. Applications are acceptable from candidates with specialisations in any literary or linguistic discipline, but candidates must be prepared to teach in varied specialisations taught by the Department and interest themselves in new proposed courses of a practical nature.

LECTURESHIP/SENIOR LECTURESHIP

Department of Biological Sciences (2 posts)

Post A: Lectureship in Botany. The successful candidate would be required to contribute to undergraduate courses in general botany and plant ecology in the Department of Biological Sciences. Applicants from any area of botanical science will be considered but the area of special interest is systematic botany. Candidates with experience of the flora of Central and Southern Africa will be of particular interest. Applicants must have a first degree and a PhD and research experience in some aspect of plant science.

Post B: Lectureship in Soil Zoology/Nematology. The successful candidate should be experienced in the general area of Soil Zoology and/or Nematology. Any area of specialisation in these disciplines will be considered but particular preference will be given to candidates with research experience with plant-infecting nematodes. He/she will be required to contribute to undergraduate courses in invertebrate zoology, parasitology and soil ecology and to supervise postgraduate students. Applicants should have a first degree in some aspect of biological or agricultural science and a PhD and research experience in the appropriate area of specialisation.

RESEARCH FELLOWSHIP/RESEARCH FELLOWSHIP

University Lake Kariba Research Station

(for the period 1st March 1984-28th February 1985)
The successful candidate must be a scientist who will be required to perform studies in the field, "aquatic primary producers in Lake Kariba". Applications must be accompanied by a research plan.

Salary Scales:
Senior Lecturer: £217,028 - £400,230/426
Lecturer Grade II: £214,688 - £386,150 - £468,156/688
Lecturer Grade I: £208,858 - £380,214/258
Senior Research Fellow: £212,388 - £388,215/272
Research Fellow Grade I: £211,180 - £354,213/178
Research Fellow Grade II: £217,118 - £300,230/258

Appointment on above scales according to qualifications and experience. Conditions of Service: Both permanent and short-term contracts are offered. Persons who are not Zimbabwean citizens may be appointed on a short-term contract basis with an initial period of two years. Short-term contracts may, in exceptional cases, be extended.

Six copies of applications giving full personal particulars (including full name, place and date of birth, sex, qualifications, employment and experience, present salary, date of availability, telephone number and name and address of three referees) should be addressed to: Director, Applications and Personnel, University of Zimbabwe, P.O. Box 107, Mount Pleasant, Harare, Zimbabwe (Telex: 4-182 ZW), from which further particulars are available.

Candidates should send an additional copy of their application to the Association of Commonwealth Universities (ACU), 30 Gordon Square, London WC1H 0PF, from whom further particulars are also available.

Closing date for receipt of applications is 15th January 1984. (18336)

Appointment
of Vice-Chancellor

The University is seeking a successor to its Vice-Chancellor, Professor Alan Peacock, who will be leaving in December 1984, after seven years at Buckingham.

The person appointed will be qualified - by experience and ability - to manage the further development of this expanding independent university.

Further particulars of the post may be obtained from the Secretary to the Council, The University of Buckingham, Buckingham MK18 1EG. Those interested in being considered for the post, or wishing to recommend anyone else for consideration, should write to the Chairman of Council, E. W. J. Palamountain, Reg. MA, at the above address, before 16th January 1984.

The University of
BuckinghamUNIVERSITY OF
SURREYDepartment of Electronic and Electrical Engineering
SENIOR LECTURESHIP
AND 3 LECTURESHIPS

As a result of new developments in the Department, including the establishment of an industrially funded chair in Information Systems Engineering, the following permanent appointments are to be made:

Senior Lecturer and Lecturer in

Telecommunications/Satellites/Information Systems

The successful candidates will join a rapidly expanding research group comprising both academic and contract research staff and students. They will be expected to support and extend research as well as make contributions to teaching, especially on a new postgraduate course in Satellite Communications due to start in October 1984.

Lectureship in Optoelectronics

The person appointed will carry out research into the design and applications of integrated optical devices in lithium niobate and/or III-IV compounds. He or she will be expected to contribute to the Department's teaching activities. Previous experience in the field would be an advantage but is not essential.

Lectureship in Electronic Engineering

The successful candidate will join one of the Department's research activities not mentioned above (ie control engineering, digital systems, power electronics, microelectronics), and will be expected to contribute to the Department's teaching activities of undergraduate and/or postgraduate level. Previous research and/or industrial experience, whilst not essential, would be an advantage.

Salary for the Senior Lecturer post will be in the range £33,616 - £14,926 per annum, and for the Lecturer posts within the range £7,190 - £14,125 per annum according to age, qualification and experience. Superannuation under USS conditions.

Further particulars are available from the Academic Registrar (AFG), University of Surrey, Guildford, Surrey GU2 5XH, or telephone Guildford 571281 ext 633. Applications from men and women, in the form of a curriculum vitae, including the names and addresses of three referees, should be sent to the same address by 10 January 1984 quoting reference 220/THES.

University of

Warwick

and

SERC Daresbury

Laboratory

LECTURESHIP IN

IMAGE ANALYSIS

A Lectureship is available in the University of Warwick Department of Biological Sciences, SERC Daresbury Laboratory, at the Synchrotron Radiation Source at Daresbury, in the field of image analysis including development of expert systems for image processing in X-ray topography and related fields. He/she will be encouraged to undertake research with the user community based at Daresbury, and teaching in the Department of Engineering in the area of computer systems and image analysis. The appointment will be on the basis of a fixed term of 3 years, with a possibility of extension for a further 3 years. Further details are available from the Academic Registrar, University of Warwick, Coventry CV4 7AL, quoting reference 157A/84, or applications to 6th January 1984.

The appointment will be for a fixed period of 3 years, with a possibility of extension for a further 3 years. Further details are available from the Academic Registrar, University of Warwick, Coventry CV4 7AL, quoting reference 157A/84, or applications to 6th January 1984.

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Universities continued



Applications are invited for the following posts for which applications close on the date shown. SALARIES (unless otherwise stated) are as follows: Professor £44,000; Senior Lecturer £33,000; Lecturer £23,000; Senior Research Fellow £23,000; Research Fellow £18,000. Further details and application procedures may be obtained from the Association of Commonwealth Universities (ACU), 30 Gordon Square, London WC1H 0PF, from whom applications are invited direct to the University.

The University of Tasmania

LECTURER IN

SURVEYING

Applications are invited for a permanent post on a three-year contract in the School of Surveying. Candidates must hold a first degree in surveying or a related discipline and have relevant professional qualifications. The successful candidate will be expected to contribute to the Department's teaching activities and to undertake research in the field of surveying. Previous experience in the field would be an advantage but is not essential.

Lectureship in Optoelectronics

The person appointed will carry out research into the design and applications of integrated optical devices in lithium niobate and/or III-IV compounds. He or she will be expected to contribute to the Department's teaching activities. Previous experience in the field would be an advantage but is not essential.

Lectureship in Electronic Engineering

The successful candidate will join one of the Department's research activities not mentioned above (ie control engineering, digital systems, power electronics, microelectronics), and will be expected to contribute to the Department's teaching activities of undergraduate and/or postgraduate level. Previous research and/or industrial experience, whilst not essential, would be an advantage.

Salary for the Senior Lecturer post will be in the range £33,616 - £14,926 per annum, and for the Lecturer posts within the range £7,190 - £14,125 per annum according to age, qualification and experience. Superannuation under USS conditions.

Further particulars are available from the Academic Registrar (AFG), University of Surrey, Guildford, Surrey GU2 5XH, or telephone Guildford 571281 ext 633. Applications from men and women, in the form of a curriculum vitae, including the names and addresses of three referees, should be sent to the same address by 10 January 1984 quoting reference 220/THES.

University of

Reading

Department of Agriculture

and Horticulture

LECTURESHIP

IN

IMAGE ANALYSIS

A Lectureship is available in the University of Reading Department of Agriculture and Horticulture, at the Centre for Image Analysis, in the field of image analysis including development of expert systems for image processing in X-ray topography and related fields. He/she will be encouraged to undertake research with the user community based at Reading, and teaching in the Department of Engineering in the area of computer systems and image analysis. The appointment will be on the basis of a fixed term of 3 years, with a possibility of extension for a further 3 years. Further details are available from the Academic Registrar, University of Reading, Reading RG2 2AA, quoting reference 157A/84, or applications to 6th January 1984.

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The Australian National

University

It is estimated that by the 1990's only about one quarter of the current staff of the ANU will be under 45 years of age. As a step towards remedying this age imbalance, the Faculty proposes to fill four tenurable positions in 1984 in disciplines in which there have been no tenurable appointments or very few such appointments in recent years. The Faculty intends to appoint to these posts younger academics although no precise age limit is specified.

In filling posts, the emphasis will be on the selection of applicants of the highest quality. Applicants should have a higher degree, preferably a PhD degree or its equivalent, in the field of their specialisation, and not be a prime consideration but at least a year's experience in the field.

Applications are invited from men and women in the following areas:

The Australian National

University

CHAIR - COMPUTER

SCIENCE

Applications are invited for a new Chair of Computer Science. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of computer science. Previous experience in the field would be an advantage but is not essential.

CHAIR - INFECTIOUS

DISEASES

Applications are invited for the Chair of Infectious Diseases in the Department of Microbiology. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of infectious diseases. Previous experience in the field would be an advantage but is not essential.

CHAIR - JAPANESE

STUDIES

Applications are invited for a new Chair of Japanese Studies. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of Japanese studies. Previous experience in the field would be an advantage but is not essential.

CHAIR - MICROBIOLOGY

Applications are invited for a new Chair of Microbiology. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of microbiology. Previous experience in the field would be an advantage but is not essential.

CHAIR - NEUROPATHOLOGY

Applications are invited for a new Chair of Neuropathology. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of neuropathology. Previous experience in the field would be an advantage but is not essential.

CHAIR - PHYSICS

Applications are invited for a new Chair of Physics. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of physics. Previous experience in the field would be an advantage but is not essential.

CHAIR - PSYCHOLOGY

Applications are invited for a new Chair of Psychology. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of psychology. Previous experience in the field would be an advantage but is not essential.

CHAIR - SOCIOLOGY

Applications are invited for a new Chair of Sociology. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of sociology. Previous experience in the field would be an advantage but is not essential.

CHAIR - THEATRE

Applications are invited for a new Chair of Theatre. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of theatre. Previous experience in the field would be an advantage but is not essential.

CHAIR - ZOOLOGY

Applications are invited for a new Chair of Zoology. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of zoology. Previous experience in the field would be an advantage but is not essential.

CHAIR - ASTRONOMY

Applications are invited for a new Chair of Astronomy. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of astronomy. Previous experience in the field would be an advantage but is not essential.

CHAIR - GEOGRAPHY

Applications are invited for a new Chair of Geography. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of geography. Previous experience in the field would be an advantage but is not essential.

CHAIR - HISTORY

Applications are invited for a new Chair of History. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of history. Previous experience in the field would be an advantage but is not essential.

CHAIR - LITERATURE

Applications are invited for a new Chair of Literature. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of literature. Previous experience in the field would be an advantage but is not essential.

CHAIR - MUSIC

Applications are invited for a new Chair of Music. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of music. Previous experience in the field would be an advantage but is not essential.

CHAIR - ARTS

Applications are invited for a new Chair of Arts. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of arts. Previous experience in the field would be an advantage but is not essential.

CHAIR - EDUCATION

Applications are invited for a new Chair of Education. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of education. Previous experience in the field would be an advantage but is not essential.

CHAIR - LAW

Applications are invited for a new Chair of Law. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of law. Previous experience in the field would be an advantage but is not essential.

CHAIR - MEDICINE

Applications are invited for a new Chair of Medicine. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of medicine. Previous experience in the field would be an advantage but is not essential.

CHAIR - DENTISTRY

Applications are invited for a new Chair of Dentistry. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of dentistry. Previous experience in the field would be an advantage but is not essential.

CHAIR - VETERINARY

Applications are invited for a new Chair of Veterinary. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of veterinary. Previous experience in the field would be an advantage but is not essential.

CHAIR - AGRICULTURE

Applications are invited for a new Chair of Agriculture. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of agriculture. Previous experience in the field would be an advantage but is not essential.

CHAIR - FISHERIES

Applications are invited for a new Chair of Fisheries. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of fisheries. Previous experience in the field would be an advantage but is not essential.

CHAIR - FORESTRY

Applications are invited for a new Chair of Forestry. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of forestry. Previous experience in the field would be an advantage but is not essential.

CHAIR - MINING

Applications are invited for a new Chair of Mining. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of mining. Previous experience in the field would be an advantage but is not essential.

CHAIR - PETROLEUM

Applications are invited for a new Chair of Petroleum. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of petroleum. Previous experience in the field would be an advantage but is not essential.

CHAIR - SPACE

Applications are invited for a new Chair of Space. The holder of the Chair will be expected to contribute to the Department's teaching activities and to undertake research in the field of space. Previous experience in the field would be an advantage but is not essential.

CHAIR - ATMOSPHERE

Administration continued

THE LAW SOCIETY
Continuing
Education Officer

£14,317-£21,249 p.a.

Applications are invited for this appointment which has been created following the approval by the Council of The Law Society of a scheme of compulsory continuing education.

The successful applicant will be responsible to the Secretary, Education and Training for establishing, implementing and monitoring the scheme which will provide for a 3 year programme for newly qualified solicitors and will become compulsory for those admitted after 1st August, 1985.

Essential requirements for the post include a combination of good administrative experience and the ability to communicate effectively with the various academic and other bodies providing continuing education. Applicants should be solicitors admitted in England and Wales and preferably have had experience of teaching law in an institution of higher education. Starting salary will be at a point on the above scale depending on qualifications and experience.

Applications including detailed curriculum vitae should be addressed to the Personnel and Training Manager, The Law Society, 113 Chancery Lane, London WC2A 1PL, and should be submitted not later than Friday, 23rd December, 1983.

(18387)

Department of Education and Science
HM Inspectors of Schools

Applications for appointment as HM Inspectors of Schools are invited from men and women preferably aged between 35 and 45, with experience in the education of pupils and students with special educational needs, particularly those arising from:

physical or visual handicap;
emotional and behavioural disorders;
moderate or severe learning difficulties.

HMI inspect educational institutions as part of both general and specialist assignments and provide professional advice to the Department and throughout the educational system.

Applicants must have good specialist qualifications, substantial teaching experience in either special or ordinary schools and colleges, and a broad interest in the development of general education for those with learning difficulties.

Starting salary, with effect from 1st January, 1984, will be within the range £15,800-£20,700 (higher in London). Relocation expenses of up to £3,000 may be payable. Application forms (to be returned as soon as possible and not later than 30th December, 1983) and further information may be obtained from Mr E. D. Foster, Department of Education and Science, Room 16/17, Elizabeth House, 39 York Road, London SE1 7PH, telephone 01-928 9222, Extensions 2768 or 2237. Please quote 14/83.

(18376)

University of Aston
Birmingham
Administrative
Assistant

Applications are invited from graduates with good administrative and clerical skills for the post of Administrative Assistant in the Department of Education and Science. The post involves the management of the department's administrative and clerical staff, and the preparation of reports and correspondence. The successful applicant will be responsible for the day-to-day running of the department and will be expected to work closely with the Head of Department.

The appointment is for one year, with the first instalment of salary payable on 1st January 1984. The salary scale is £12,310-£15,810 p.a.

Applications form and further particulars may be obtained from the Personnel Office, University of Aston, Birmingham B4 7ET, quoting reference number 14/83. Applications should be submitted by 15th December 1983.

Announcements

HARROW COLLEGE OF
HIGHER EDUCATION

Vice Principal
(Academic & Development)
Dr R. M. JARMAN MA DPhil MIBiol
Vice Principal
(Resources & Administration)
Mr J. L. INNES MA FCA
with effect from the 1st January 1984

(18381)

Colleges of Higher Education

LONDON BOROUGH OF HARROW
HARROW COLLEGE OF HIGHER EDUCATION

Applications are invited from suitably qualified candidates for the following challenging senior management appointments in the College:

DEAN OF THE
FACULTY OF ART AND PHOTOGRAPHY
(Grade VI and Faculty and London Allowances)

DEAN OF THE
FACULTY OF BUSINESS AND MANAGEMENT
(Grade VI and Faculty and London Allowances)

HEAD OF THE SCHOOL OF SCIENCES
(Associate Dean)
(Grade V and London Allowances - with the possibility of appointment to the post of Dean of the Faculty of Science and Technology)

Deans of Faculties and the Associate Dean are members of the College Management Board and of the Academic Board. They provide academic and resource leadership for the development of courses and subjects which comprise the Faculty programmes.

Applicants should be fully conversant with the requirements of the main validating bodies in the public sector of higher education: CMAA, BTEC.

Salary scales: Grade VI £16,832-£18,327 with Faculty and London Allowances. Grade V £14,390-£17,091 with London Allowances.

For further information concerning the appointment of interest to you (please specify) an application form please write to: The Principal, Harrow College of Higher Education, Watford Road, Northwick Park, Harrow HA1 3TP (Telephone: 01-884 5422 Extn. 232) to whom completed applications are to be returned by 18th January, 1984.

Harrow is an Equal Opportunities Employer (18381)

NIHE
NATIONAL INSTITUTE FOR HIGHER EDUCATION DUBLINAssistant Lecturer
in Communications

The School of Communications, has its own television, sound, graphics, print and photography studios, together with access to the Institute's computing and learning resource centres. The School has responsibility for the BA (Honours) programme in Communication Studies, a Graduate Diploma in Journalism, post-graduate research students and a variety of service teaching in other Faculties. The School has recently obtained substantial EEC funding for research into information technology.

The School seeks candidates in all areas of communications or is particularly interested in candidates with interests in one or more of the following:

Journalism: Communication Theory and Research Methods; Media Sociology; Social and Organisational Psychology; Informatics; International Communication; Advertising; Public Relations and Media Production.

Candidates should be well qualified academically and in addition have substantial research interests and ideally should have had industrial/business, academic or research experience.

It is hoped that the post would be taken up by the successful candidate by October, 1984, at the latest. Candidates who expect to have obtained a post-graduate qualification by that date are invited to apply at this time.

Salary Scale: IRC6,781 - £11,935
Application forms and further details are available on written request from The Personnel Office, National Institute for Higher Education, Glasnevin, Dublin 9, to whom they should be returned by 9th January, 1984.

Suffolk College
of Higher and Further
Education

These vacancies, effective from 1st May, 1984, arise from the impending retirement of the existing Heads.

HEAD OF DEPARTMENT OF ART
AND DESIGN

A grade IV Department with potential for growth in the provision of a range of currently approved DATBC National Certificate, Diploma and Higher Diploma courses in General Art and Design, Graphic Design, Illustration, Film and TV Design, Exhibition and Stage Design.

HEAD OF DEPARTMENT OF
CONSTRUCTION

A grade IV Department providing an established range of courses at craft, technician, and professional levels.

Salary, both posts: Head of Department Grade IV £14,148 to £15,449
Application forms and further particulars from the Principal, Suffolk College, Rope Walk, Ipswich IP4 1LJ, to whom they should be returned within fourteen days of this advertisement. Please enclose a stamped addressed envelope.

Suffolk College, Ipswich, Suffolk

Canterbury
Christ Church College of
Higher EducationLECTURER IN
INFANT EDUCATION

Applications are invited from suitably qualified candidates for the post of Lecturer in Infant Education to commence in September 1984. Candidates should have good academic qualifications, such as a higher degree in Education, and experience of teaching children within the age range 3-8 years.

The college offers B.A., B.Ed and B.Sc. degrees, PGCE advanced diploma and higher degrees in Education.

Salary: Lecturer £7,815 - £13,443 p.a.

For further details write to Mrs. Joan Long, Personnel Assistant, Christ Church College, Canterbury, enclosing a stamped addressed envelope, to whom applications should be sent not later than 31 January.

Colleges of Further Education

ilea Inner London
Education Authority

LONDON COLLEGE OF FASHION
20 John Prince's Street, London W1

Head of Department V
of Hairdressing & Beauty Therapy

The Governors invite applications for the post of Head of Department of Hairdressing & Beauty Therapy which has become vacant following the death of Mr L. Santoro.

Applicants should have appropriate qualifications and experience in a post of comparable responsibility in industry and/or Further/Higher Education.

Salary in accordance with Burnham (FE) agreement on a scale £15,390-£17,091 (plus 1987 Inner London Allowance). Further information and application forms, returnable within 14 days of this advertisement, from Senior Administrative Officer, London College of Fashion, 9/12 Barrett Street, London W1.

ILEA is an equal opportunities employer.

Inner London
Education Authority
London College of
Printing

Design Department
Applications are invited for the following posts:

Principal Lecturer in Graphic and Typographic Design

Course leader of the DATBC Higher Diploma in Graphic Design

On an incremental scale with the range of £13,935-£15,449 (plus 1987 Inner London Allowance) the successful candidate will be expected to have obtained a post-graduate qualification by that date are invited to apply at this time.

Salary Scale: IRC6,781 - £11,935
Application forms and further details are available on written request from The Personnel Office, National Institute for Higher Education, Glasnevin, Dublin 9, to whom they should be returned by 9th January, 1984.

Suffolk College
of Higher and Further
Education

These vacancies, effective from 1st May, 1984, arise from the impending retirement of the existing Heads.

HEAD OF DEPARTMENT OF ART
AND DESIGN

A grade IV Department with potential for growth in the provision of a range of currently approved DATBC National Certificate, Diploma and Higher Diploma courses in General Art and Design, Graphic Design, Illustration, Film and TV Design, Exhibition and Stage Design.

HEAD OF DEPARTMENT OF
CONSTRUCTION

A grade IV Department providing an established range of courses at craft, technician, and professional levels.

Salary, both posts: Head of Department Grade IV £14,148 to £15,449
Application forms and further particulars from the Principal, Suffolk College, Rope Walk, Ipswich IP4 1LJ, to whom they should be returned within fourteen days of this advertisement. Please enclose a stamped addressed envelope.

Suffolk College, Ipswich, Suffolk

The University of
Bath
POSTGRADUATE
RESEARCH
STUDENTS

Applications are invited from graduates of other universities for postgraduate research studentships in the following areas:

1. The history of the city of Bath from the Roman period to the present day.

Librarians

University of Wales
Saint David's
University College
LampeterASSISTANT
LIBRARIAN

Applications are invited from suitably qualified candidates for the post of Assistant Librarian with effect from 1st October, 1984. Candidates should possess a recognised qualification in librarianship, knowledge of one or more modern languages, and a good command of English will be an advantage.

Salary according to scale £7,190 to £11,115 and application particulars may be obtained from the Academic Registrar, Saint David's University College, Lampeter, Dyfed, SA48 7ED, to whom completed applications should be sent by 15th January 1984.

For further details write to Mrs. Joan Long, Personnel Assistant, Christ Church College, Canterbury, enclosing a stamped addressed envelope, to whom applications should be sent not later than 31 January.

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Research & Studentships continued

SOCIAL SCIENCE RESEARCH
COUNCILComparative Research
in Government and
Industry Relations

The SSRC proposes to launch a major research initiative in the field of government-industry relations. Individual researchers, research institutes and centres in the social sciences and related disciplines are invited to submit proposals for funds to undertake research on a project or projects within a programme of research whose principal focus is the study of institutions and organizational structures and the linkages between them. Cross-sectional and cross-national comparisons will be incorporated into the design of the programme from its inception, but not necessarily into each individual project. Research commissioned will therefore include the study of an industry or industries chosen from, inter alia, telecommunications, pharmaceuticals, and robotics; textiles, building and building components, and steel.

Proposals for the researching of other industries in which the applicant has an interest will also be considered. The main countries chosen for comparison with the UK will probably be, in the first instance, France and West Germany, although an applicant may offer for consideration by the SSRC other European industrialized countries of which they have knowledge and research experience.

For further details and outline specifications of the research write to: Paul Winter, Secretary, Government and Industry Relations Sub-Committee, SSRC, 1 Temple Avenue, London EC4Y 0RD. (18388)

Courses continued

University of
Newcastle upon Tyne
Centre for Urban and
Regional Development
StudiesURBAN ECONOMIC
DEVELOPMENT
2 RESEARCH
ASSOCIATES (18
MONTHS)

1 RESEARCH
ASSOCIATE (6
MONTHS)

The Centre has vacancies for two research associates to work on a study of the effects of urban and regional policy on the economy of the Newcastle Metropolitan Area. The study will be directed by Professor J. S. Winter, who is also part of the UK's contribution to the European Commission's study of urban economic development. Candidates should be graduates with a degree in urban studies, economics, geography, or a related discipline, and have a good first class honours degree. They should also have a good knowledge of the urban and regional policy context, and be able to undertake research in the field of urban economic development. The successful candidate will be expected to undertake research in the field of urban economic development, and to contribute to the development of the Centre's research programme.

There is also a vacancy for a research associate to work on a study of the effects of urban and regional policy on the economy of the Newcastle Metropolitan Area. The study will be directed by Professor J. S. Winter, who is also part of the UK's contribution to the European Commission's study of urban economic development. Candidates should be graduates with a degree in urban studies, economics, geography, or a related discipline, and have a good first class honours degree. They should also have a good knowledge of the urban and regional policy context, and be able to undertake research in the field of urban economic development. The successful candidate will be expected to undertake research in the field of urban economic development, and to contribute to the development of the Centre's research programme.

For further details and application forms, please write to: The Director, Centre for Urban and Regional Development Studies, University of Newcastle upon Tyne, Newcastle upon Tyne NE1 7RU. (18389)

University of
Cambridge
St John's CollegeTHE NORMAN
LASKE SENIOR
STUDENTSHIP

St John's College is inviting applications for the Norman Laske Senior Studentship. The studentship is for a student who has completed a first class honours degree in a relevant subject, and who is able to undertake research in the field of urban economic development. The successful candidate will be expected to undertake research in the field of urban economic development, and to contribute to the development of the Centre's research programme.

For further details and application forms, please write to: The Director, Centre for Urban and Regional Development Studies, University of Newcastle upon Tyne, Newcastle upon Tyne NE1 7RU. (18390)

University of Bath
MASTERS DEGREES
IN EDUCATION

Including specializations in Educational Technology, Educational Research, and Educational Management.

The School of Education offers places for the one-year taught courses leading to the degree of M.Ed. The course is organized on a modular basis so that students study six modules from the following list:

1. Educational Technology
2. Educational Research
3. Educational Management
4. Educational Policy
5. Educational Sociology
6. Educational Psychology

Students may choose to specialize in one of the above areas, or to study a combination of modules. The successful candidate will be expected to undertake research in the field of urban economic development, and to contribute to the development of the Centre's research programme.

For further details and application forms, please write to: The Director, Centre for Urban and Regional Development Studies, University of Newcastle upon Tyne, Newcastle upon Tyne NE1 7RU. (18391)

Courses

For further details and application forms, please write to: The Director, Centre for Urban and Regional Development Studies, University of Newcastle upon Tyne, Newcastle upon Tyne NE1 7RU. (18392)

For further details and application forms, please write to: The Director, Centre for Urban and Regional Development Studies, University of Newcastle upon Tyne, Newcastle upon Tyne NE1 7RU. (18393)

For further details and application forms, please write to: The Director, Centre for Urban and Regional Development Studies, University of Newcastle upon Tyne, Newcastle upon Tyne NE1 7RU. (18394)

Overseas

MATHEMATICS/
SCIENCE TEACHERSSAUDI ARABIA
£15,000 plus

One of the major priorities of Aramco, the world's largest oil producing company, is the continuing education and development of its Saudi Arabian Workforce, who will eventually become the Engineers and Technicians of the future.

You will have at least 4 years' teaching experience and be qualified to HNC/HND/BSc and have experience teaching foreign students within the age range of 14-18 years.

For the Maths teachers a knowledge of modern maths concepts, plane, solid and analytical geometry, advanced algebra, trigonometry and calculus is essential. Science teachers should have a working knowledge of modern instructional methodology.

The benefits provided are excellent and in addition to attractive salaries, include regular U.K. leave with

company paid air-fares, open ended employment contracts offering job security, usual overseas tax allowances, comprehensive medical care and excellent sport and recreational facilities. A valid U.K. driving licence is essential.

Please write for an application form, quoting reference 8892/TBHS to: ARA International, 17-19 Maddox Street, London W1R 0BY. Tel: 01-629 2356 or 01-491 8013 (ansaphone). Interviews planned early January 1984.

ARAMCO

ARA International

partners in progress

UNIVERSITY OF NATAL
Durban, South AfricaDepartment of
Mathematical Statistics

Applications are invited from suitably qualified persons regardless of sex, religion, race, colour or national origin for appointment to the post of

DIRECTOR OF
STAFF DEVELOPMENT

The salary will be in the range: R25 100-R30 256 per annum plus a pensionable allowance of 12%.

The primary task of the Director of Staff Development will be to assist the academic staff to perform their duties more effectively, by providing appropriate training and consultancy services.

As the post is at Professional level, applicants should be senior academics with demonstrated experience in the area of staff development.

The commencing salary will be dependent on the qualifications and/or experience of the successful applicant. In addition, a service bonus of 93% of one month's salary is payable annually.

A two year contract of appointment is available which would include return economy-class airfares for the successful applicant and family.

Application forms, further particulars of the post and information on pension, medical aid, group insurance, staff bursary, housing, loan and subsidy schemes, long leave conditions and travelling expenses on first appointment are obtainable from the Secretary, South African Universities Office, Chichester House, 278 High Holborn, London WC1V 7HE or the Registrar, University of Natal, King George V Avenue, Durban, South Africa, 4001, with whom applications, on the prescribed form, must be lodged not later than 15th January, 1984 quoting reference D168/83. (18397)

UNIVERSITY OF NATAL
Durban, South AfricaDepartment of
Mathematical Statistics

Applications are invited from suitably qualified persons regardless of sex, religion, race, colour or national origin for appointment to the post of

LECTURER

The salary will be in the range: R25 100-R30 256 per annum plus a pensionable allowance of 12%.

The commencing salary will be dependent on the qualifications and/or experience of the successful applicant. In addition, a service bonus of 93% of one month's salary is payable annually.

A two year contract of appointment is available which would include return economy-class airfares for the successful applicant and family.

Application forms, further particulars of the post and information on pension, medical aid, group insurance, staff bursary, housing, loan and subsidy schemes, long leave conditions and travelling expenses on first appointment are obtainable from the Secretary, South African Universities Office, Chichester House, 278 High Holborn, London WC1V 7HE or the Registrar, University of Natal, King George V Avenue, Durban, South Africa, 4001, with whom applications, on the prescribed form, must be lodged not later than 15th January, 1984 quoting reference D168/83. (18398)

UNIVERSITY OF NATAL
Durban, South AfricaDepartment of
Mathematical Statistics

Applications are invited from suitably qualified persons regardless of sex, religion, race, colour or national origin for appointment to the post of

LECTURER

The salary will be in the range: R25 100-R30 256 per annum plus a pensionable allowance of 12%.

The commencing salary will be dependent on the qualifications and/or experience of the successful applicant. In addition, a service bonus of 93% of one month's salary is payable annually.

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UNIVERSITY OF NATAL
Durban, South Africa